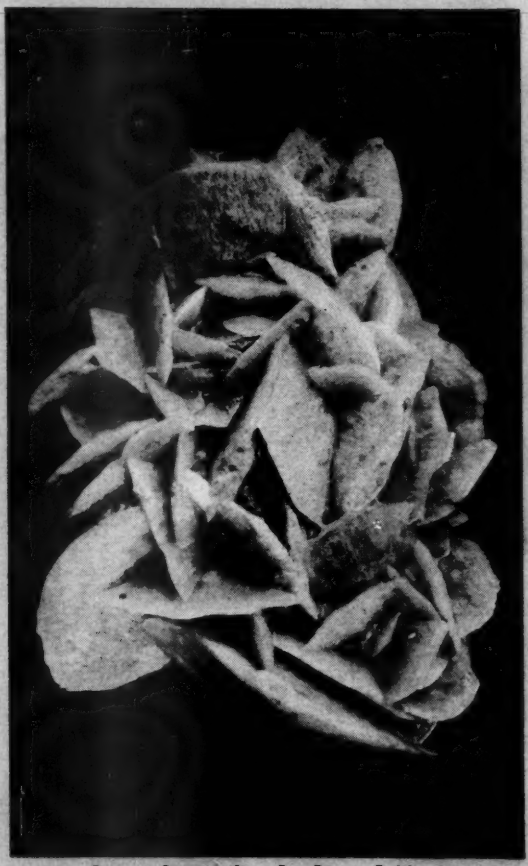
ROCKS AND MINERALS



Gypsum Rosettes from San Diego, California

Courtesy Plummer's Minerals

MINERALOGY • GEOLOGY • LAPIDARY

60c

SEPTEMBER - OCTOBER, 1953
(WHOLE NUMBER 236)

54th LIST OF FINE MINERALS

RHODOCHROSITE, Butte. Xled. with Quartz xls. 3x2½ $3.00
do., Oberneisen. Mammillary, rose-pink, on rock. 2½x2 ..... 3.50
ARAGONITE v. MOSSOTITE, Yorkshire. Light blue fibrous-columnar. 4x2 ..... 2.00
WAVELLITE, Co. Cork. Eire. Radiated mammillary mass. 3½x3 ..... 3.00
STIBNITE, Romania Xled. mass w. small implanted Quartz xls. 3x2½ 6.00
SIDERITE v. SPHEROSIDERITE, Romania. Mammillary on BARITE xls. 4x3x2½ 6.00
APATITE, Ontario. 2 doubly-term. red xls. in parallel position. 4x1¾ 3.50
CUPRITE, Wheal Gorland, Cornwall. Xld. mass with COPPER. 3½x2x2 6.00
TETRAHEDRITE, Peru. Group of large (1¼") xls. 2½x1½ 2.50
VIOLARITE, Vermilion Mine, Sudbury, Ont. W. Chalcopyrite. 3x1¾x1½ 2.50
CONICHALCITE, Tintic. Bright green minutely mammillary on rock. 3x2x1½ 3.00
SYLVITE, Carlsbad, N. M. Reddish xlline. mass. 2x2x2 ..... 1.25
BENITOITE, California. Two ¾" xls. in matrix. 1½x1¼ 7.50
GOETHITE, Cornwall. Brilliant xls. with red Quartz xls. 4x3x1½ 3.50
AZURITE, Burra Burra, S. Australia. Xld. solid "ball", 2½' diameter 12.50
TORBERNITE, Cornwall. Xl. plates on rock. 3x2 ..... 3.50
CHALCOPHYLLITE, Cornwall. Xld. on matrix. 2½x1¾ 6.00
SYLVANITE, Offenbanya. Xld. and xlline. on rock. 3x2 ..... 3.00
CHRYSOBERYL, Topsham, Maine. Xls. in Feldspar. 2x1¼. Not cuttable 2.50
OLIVENITE, Cornwall. Radiating mass w. some rock; "Wood Copper" 2x1½ 1.25
FREIESLEBENITE, Spain. Xlline. mass w. a few micro. xls. 3x2x1 ..... 6.00
BRUCITE, Texas, Pa. Well xld. mass. 3x1½. Fluorescent under LW 3.00
BERZELIANITE, Sweden. Impregnating Calcite. 2x1½ 1.25
CRYOLITHIONITE, Greenland. Xlline. mass. 3½x2x2 ..... 2.00
COPPER in CALCITE, Michigan. Small (up to ½") xls. in rock. 3x2x2 3.50
CHALCOPYRITE, Cornwall. Stalactitic &mammillary mass. 3x1½x1½ 3.50
QUARTZ v. SMOKY QUARTZ, Switzerland. Good "twisted" xls. 3x2 ..... 10.00
CHALCEDONY, Romania. Pseudo. after xld. FLUORITE, blue. 3x2 ..... 3.50
CHONDRODITE, Tilly Foster. Small xls. & xlline. mass. 2½x2x1¼ 2.00
DIABOLEITE, Mammoth Mine, Arizona. Xld. in xlline. mass. 1½x1¼ 5.00
ANDRADITE, Franklin, N. J. Group of brown xls. 3½x2 ..... 2.50
FRANKLINITE, Franklin, N. J. 2½" octahedral xl., fairly perfect 5.00
SPESSARTITE, Avondale, Pa. Large (2½") composite xl. in matrix. 4x3 ..... 3.50
VANADINITE, Wanlockhead. Small globular masses on ore. 2½x2 ..... 2.00
AMOSITE, Transvaal. Fibrous mass. 10x3x1. (Very long fibre). 2¾ lbs. 6.00
ANDRADITE, Vasko, Hungary. Yellowish xls. coating rock. 5x4x3. 2¾ lbs. 6.00
BRAZILIANITE, Brazil. Portion of brilliant translucent xl. 1x1x½ 7.50
RHODONITE v. FOWLERITE, Franklin, N. J. Bright xls. in Calcite *(not eaten out by acid)*. 3½x2x1½ 7.50

HUGH A. FORD

OFFICE AND SHOWROOM: 110 WALL STREET NEW YORK 5, N. Y.

Telephone: BOwling Green 9-7191

No lists furnished, but inquiries for specific minerals welcomed.

ROCKS and MINERALS

PETER ZODAC, Editor and Publisher

America's Oldest and Most Versatile Magazine for the Mineralogist, Geologist, Lapidary.

Published Bi-Monthly

OFFICIAL JOURNAL

ROCKS & MINERALS ASSOCIATION

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Chips from the Quarry

A Plug For R & M

During June and July we received quite a number of subscriptions and orders for "How to collect Minerals" from sources that were new to us and which puzzled us completely until the following letter was received:

Editor R & M:

I am a machinist by trade and started to introduce my mineralogical hobby to the fellows in the shop where I work. Later I was asked to send a notice on mineralogy to our Union paper, THE MACHINEST. This I did. Then I was asked for a contribution to the "District Dispatch." Seems that the membership was very interested. Sometime ago THE MACHINEST again requested another article and in it I put a good plug for ROCKS AND MINERALS and your book "How To Collect Minerals," which I recommended. Since then my correspondence has increased by leaps and bounds. A number of members have asked for information on how to collect minerals, how to prospect for gold, uranium, oil, etc. Quite a few have informed me that they have gotten your book and also subscribed for ROCKS AND MINERALS or are going to. In short, information has been asked about everything from gold down to bluestone, precious stones, lapidary outfits and what have you.

Einar Whalen
229 St. Johns Place
Brooklyn 17, N. Y.

July 4, 1953

We are very grateful to Mr. Whalen for his contribution to mineralogy and also for the plug for R & M and "How To Collect Minerals." We wish other subscribers would follow Mr. Whalen's example and do their bit for mineralogy.

Congratulations From Switzerland!

Editor R & M:

Please find enclosed $6.00 to renew my subscription to R & M for two years. I take the opportunity to thank you sincerely for all the work you are always doing on your most excellent magazine. Hearty congratulations for your outstanding performance as editor and author.

I feel ashamed that I never found the time to write you on mineral localities. But I promised to send you at least some samples of sands from Switzerland which I hope to collect on my vacation this fall.

Dr. Franz Haefliger
Lothringerstrasse 11,
Basel, Switzerland

July 14, 1953

Max Haleck Visits R & M

We have had many subscribers call at the offices of R & M but the one who has traveled the longest distance (7,000 miles) was Max Haleck of Pago Pago, American Samoa. Mr. Haleck visited us Monday, Aug. 3 and tho for us his visit was much too short, about an hour, it was a most enjoyable one.

Accompanying Mr. Haleck was George Babitz of New York City who gave us his subscription before he left. Mr. Babitz has the distinction of being our most traveled subscriber—believe he told us he was in every country of the world except three. Unfortunately for mineralogy he never was a collector, nor in anyways interested in minerals but—Mr. Haleck has him interested now. Mr. Babitz is still travelling—he is an executive for a large company—and now we hope that he may make some interesting mineral finds that we may report in R & M.

Hugh McCrory Back in Alaska

Hugh McCrory, who for the past year or so has been touring Europe, is back in Alaska again. His letter, dated Aug. 4, 1953, reads:

"Have just returned to Platinum. Please advise how I stand on my subscription so I can remit. Make my address starting next issue, Platinum, Alaska. In a hurry to get this out on plane which is due in now."

Mr. McCrory is one of R & M very good friends and while he was away his copies of the magazines were held for him; his subscription does not expire until December, 1954. We hope he will send us some notes covering localities visited and minerals collected during his trip as he had planned to visit Ireland, Scotland, England, Wales, France, Germany, Spain and Italy.

O. H. LONG, Dealer, Passed Away

O. H. Long, a dealer of Challis, Idaho, passed away last Feb. 12, so we have been informed by Viola Shull, Challis, Idaho, in her letter of Aug. 13, 1953.

ATTENTION SUBSCRIBERS!

ROCKS AND MINERALS comes out once every two months as follows:

Jan. - Feb., out about	Feb. 10
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July - August, out about	Aug. 10
Sept. - Oct., out about	Oct. 10
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Moonstone From Olmstedville, New York

By B. M. SHAUB

Moonstone, contrary to ones expectation, is not a "stone" of a single definite mineral species. The word applies to the appearance of the stone rather than its composition. The unmodified word is used correctly when describing stones of the feldspar minerals orthoclase and its varities, also microcline, albite, oligoclase and others which show a play of white, pearly white, bluish white or blue color as the stone is rotated in a beam of light. The name should not be applied to other minerals such as opal, chalcedony, scapolite, corundum or those minerals which exhibit a similar play of colors without qualifying the stone. It is correct in speaking or writing about these if the mineral name is used as a qualifying adjective as, for example, chalcedony moonstone or scapolite moonstone.

The moonstone about which this description is concerned is found as one of a number of associated minerals which occur within an outcrop of the Grenville limestone located about one mile west of Olmstedville along the Olmstedville-Minerva highway. The pit or quarry is along the south side of the highway and about 250 feet from the road. The limestone here has been disintegrated by weathering so that it can be readily excavated by means of a small power shovel for highway work. The excavated area is about five to eight feet deep.

There are two important conditions necessary for a good mineral collecting site. The first is a previous suitable geological environment for the minerals to develop and the second is that the mineral-bearing areas are made available and workable to the collector. Both of these conditions have prevailed at Olmstedville. A few words may first be written about the geological environment. The Grenville limestone and associated gneisses are among the oldest rocks which geologists in general will readily admit are of sedimentary origin. These rocks have undergone profound changes during the 1 to 1½ billions of years which have elapsed since their deposition on the floor of some sea. During much of this time interval the rocks were probably subjected to high pressures and temperatures although not sufficiently high to melt them and subsequently incorporate the molten material into a mobile magma to be pushed around and injected into the overlying rocks by earth movements. Within the highly heated soft and plastic limestone rock many interesting minerals can and do develop when there is a diversity of chemical components, mineral building units, available. Such conditions are present in those limestones which originally were impure and contained clays derived from the previous acid, basic and other rocks. The greater the variety of the materials present as impurities in the limestone the greater will be the variation in the minerals developed. The plasticity of calcite, when highly heated is of much importance in the formation of large crystals. The presence of water and other fluids greatly assist in rendering a higher degree of plasticity to the calcite and greater mobility to the component mineral materials present. This environment also promotes the development of coarse grained calcite. Hence it is quite natural for the crystal prospectors to search out those portions of the limestone which are very coarse grained and which exhibits the largest cleavage surfaces. Here he will also find the largest grains and/or crystals of the associated minerals. Thus it is at Olmstedville. The reward is greatest to those who can locate such calcite zones and follow them until the places are found where the associated minerals have crystallized.

In this deposit the principal minerals in addition to the calcite matrix are probably pyroxenes and some amphiboles. The former are chiefly diopside and augite. They often occur as rather small rounded grains, the augite has also developed into

rough irregular crystals up to several inches in length. The amphiboles are chiefly tremolite and actinolite and occur as small grains or in crystals up to several inches long. Scapolite also occurs as grains and crystals or irregular masses up to 10 inches across and occasionally well developed crystals of a large size are obtained, however, the crystals lack smooth brilliant faces. Probably the most unusual mineral in the limestone here is vesuvianite (1, p. 907) which occurs in good crystals up to five inches across the prism faces. A number of other minerals are also present in the limestone. Rowley (1, p. 907) states that "beautiful cleavages of Adularia (Orthoclase) feldspar" are among the minerals present. While he did not describe the feldspar as being moonstone, it is undoubtedly the same material which the writer found during the summer of 1949 and which is described in some detail below.

One of the most striking features of most of the minerals associated with the limestone at Olmstedville, as well as those found at other similar occurrences in the Adirondacks, Ontario and Quebec, is the marked rounding of the crystal edges. Often the small crystals are nearly rounded grains with faces apparently scattered here and there. Even the edges of the mineral grains are usually rounded. Writers have described such crystals as resulting from their apparent fusion along the edges. This is probably not the case for it is a nearly universal condition between highly metamorphosed limestone matrices and the inclosed crystals or grains of other minerals. If parts of the grains were

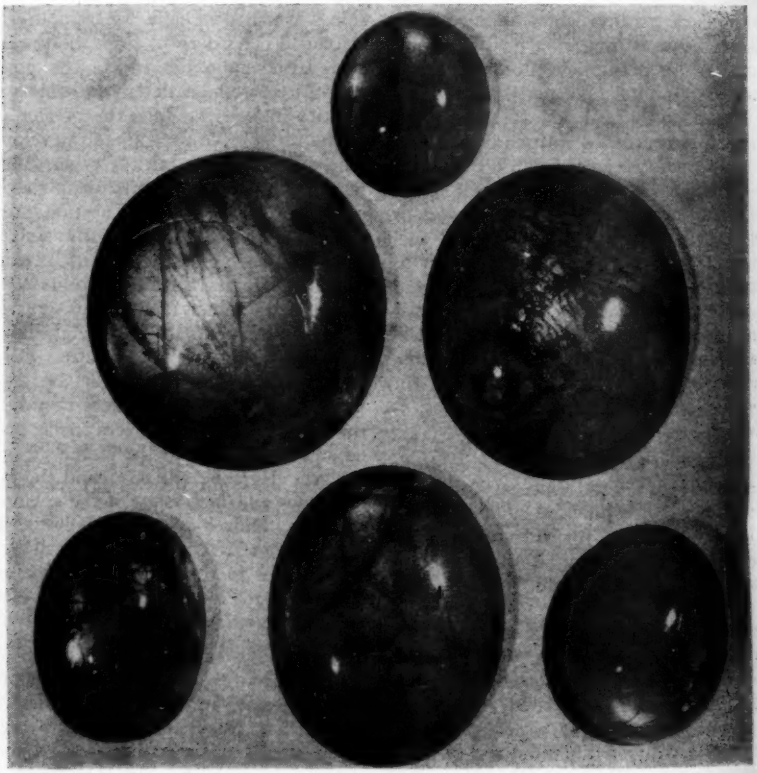

Fig. 1. A few cabochon gems cut from the Olmstedville, New York moonstone.

fused then the grains or crystals resulting from the solidification of the molten material would probably possess sharp edges or consist of a mosaic of crystalline grains. Neither of these conditions appear to be present. In addition minerals infusible before the blowpipe occur with rounded crystal edges in the limestones. Hence one must look to the influence of the calcite as the probable cause of the rounding of the crystals rather than a fusing temperature.

Most of the pieces of the feldspar observed are in the category of mineral grains rather than crystals. It too has undergone the same process of having its edges rounded. The minerals intimately associated with the feldspar are vesuvianite, calcite, light to dark green diopside, scapolite and sphene of a pinkish color. In some pieces of the feldspar these minerals occur as rounded included grains, but they are often attached to the periphery of the feldspar. The associated graphite occurs as thin plates often with straight sharp edges indicating the presence of crystal faces. In its general appearance the feldspar has a pronounced pearly luster and as it is rotated in a beam of light the play of colors varies from the normal appearance of the mineral to a rather good degree of brightness having a pearly to a faint b'uish white color. The intensity varies from area to area over the surface. An examination of the cabochons, illustrated in Fig. 1, will show this feature together with the presence of irregular fractures and extraneous inclusions. The fine intricate twinning, Fig. 2, indicates that the feldspar is microcline rather than the adularia variety of orthoclase.

The cause of the play of colors in moonstone is usually assigned to reflections from substances included in the mineral. Some fine quality moonstone are

Fig. 2. Thin section of the moonstone under crossed polarized light showing the very fine cross twinning of microcline together with small included grains of albite. X=40.

nearly transparent, yet they exhibit a pronounced display of a pleasing blue color. Twinning of very minute portions of the feldspar has been given as the cause of the play of colors, however, many feldspars with equally fine twinning do not show this phenomenon.

The Olmstedville feldspar leaves no question as the cause of the play of color. Even a casual examination with a good hand lens will reveal the fact that the light effect comes from reflections from many included particles arranged more-or-less in parallel. The reflecting surfaces of the particles do not give a sudden peak reflection due to a nearly simultaneous reflection from a multitude of particles when rotated through a very small angle, instead the intensity of the play of colors increases and decreases through an angle of rotation of about 30 to 40 degrees. The size and distribution of the particles vary from place to place over a polished area of several square inches and in a few instances a series of reflections come from a second or third group of particles each arranged nearly parallel in their group but the reflecting planes of one group make angles with approximately 15 degrees with those of the adjoining zone. The principal zone of reflections appears to make a small angle with the basal cleavage.

Under the polarizing microscope one sees at once that the feldspar is a very finely twinned microcline, Fig. 2, which has numerous elongated inclusions of albite, the elongation of which is two or three times their width on the average. The albite grains are probably subhedral crystals, more or less randomally scattered, but aligned with their elongations somewhat parallel, Fig. 3.

When the particles are of such a large size the reflections consist essentially of the same quality light as that of the source. That is, the reflections coming from the large included particles in this

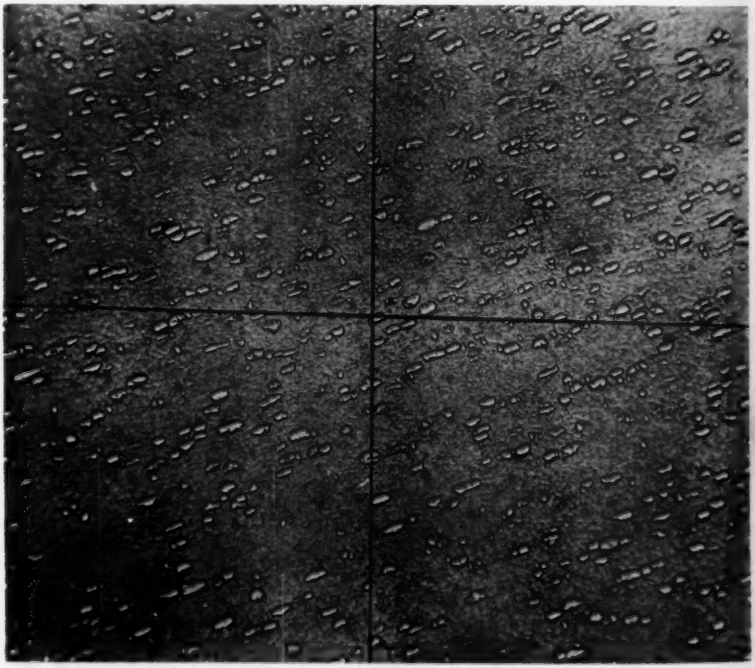

Fig. 3. Thin section of the same material photographed under plain polarized light. In this section the discrete albite particles are clearly outlined X=40.

feldspar are in general white, however, in places where the particles are of much smaller proportions the quality of the reflections become a bluish white.

Examples of fine quality moonstones from other localities are often nearly clear and transparent. Nevertheless they produce a fine play of bluish white to blue color which is probably due more to the scattering of the blue or short wave lengths of light from minute included particles rather than to reflections from the surfaces of much larger inclusions.

Upon using the highest power of the binocular microscope one can see a play of colors associated with each of the larger grains of included albite which possess the customary twinning. This color display is probably due to the "grating effect" of the twinning lamella, but the separation of these color spectra is insufficient for the unaided eye to resolve. The colors are, therefore, recombined as white light when viewed by an observer.

Clean unfractured pieces with fair color are only rarely present in sizes up to around five carats. The color is also inferior to that of good quality moonstone. Consequently the occurrence cannot be looked upon as one of any commercial or economic importance. On the other hand the locality provides an opportunity for mineral collector and the amateur gem cutter to obtain another material to add to their collections.

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1. Rowley, Elmer B., Vesuvianite Crystals from Essex County, New York, ROCKS AND MINERALS, Vol. 23, pp. 906-907, 1948.

A NEW TYPE OF CRYSTAL CAVITY FROM NEW JERSEY

By ROBERT A. FITTON
57 Adelaide Street, Belleville 9, N. J.

The basalt quarries of northern New Jersey, particularly in the vicinity of Paterson, have long been noted for the unique crystal cavities found in them. Most of these cavities are molds after anhydrite and glauberite, the matrix commonly being of quartz, prehnite or datolite. Schaller mentions other types of cavities of less common occurrence: molds after apophyllite, quartz, calcite, natrolite and pectolite, in matrices of quartz, zeolites and associated hydrous silicates.[1]

This area has recently furnished a type of crystal cavity which has hitherto been undescribed. The material upon which the discovery was made was collected from a quarry in Upper Montclair on April 18, 1953, by Will Shulman of Newark and Joe Stromwasser of the Bronx. These two, together with Mr. Stromwasser's son, Larry, collected samples of stalactitic limonite partially coated with small aggregates of chrysocolla. The specimens were not overly attractive, but were interesting enough to justify preserving a few.

Mr. Shulman, knowing of my passion for New Jersey trap rock minerals, presented me with a piece of this material. It was not until I examined the specimen under a lens that its unusual nature became apparent. Some of the chrysocolla had the appearance of being a coating on quartz crystals. However, upon turning the specimen over, I found a spot where the terminations of the chrysocolla coatings had been broken off. Perfect hexagonal crystal cavities in the mass were thus exposed, and I had discovered the first known occurrence of quartz molds in chrysocolla.

The original quartz crystals had been macroscopic in size, the average measurements of the molds being 2 mm. in length and ½ mm. in diameter.

The cavities do not extend into the limonite, showing that it (or the mineral which it later replaced) antedated the deposition of the quartz. Since chrysocolla is an alteration product rather than a hydrothermal species, there exists a strong possibility that the mineral originally deposited on the quartz was one of the more basic copper minerals, later altered to chrysocolla, for which the disintegrating quartz supplied the silica. This order of events is essentially in agreement with Schaller's theory of the paragenesis of the trap rock minerals.[2]

1 Schaller, W. T., The Crystal Cavities of the New Jersey Zeolite Region, pp. 77-78, 1932.

2. *Ibid.*, pp. 17-22.

SILVER UNDER SUPERIOR— THE STORY OF SILVER ISLET MINE

MRS. LESLIE R. BACON

1856 23rd Street, Wyandotte, Mich.

Silver Islet originally was a small spot of land, 75 feet long by 60 feet wide and only eight feet at its highest point above the water of Lake Superior. It is about 4000 feet southeast from the mainland of the Thunder Peninsula but is not visible from shore as long narrow Burnt Island hides it from view. About 20 miles to the south is Isle Royale.

The silver, lead and zinc region in the Thunder Bay district, as described by T. L. Tanton, embraces an area on the north shore of Lake Superior 150 miles long and 25 miles wide and extending from the International boundary northeasterly to Nipigon Bay. Silver Islet was the richest of the known silver deposits in the area. The region in which the veins occur is underlain by a complex of ancient schistose volcanic and sedimentary rocks and intrusive granite and granite-gneiss, classified as Early Pre-Cambrian. Above this is a group of nearly flat-lying strata in which three series are recognized: Animikie, Sibley and Osler. All these rocks have been intruded by diabase dikes. The Silver Islet vein system occurs in a fault zone which passes through Animikie sediments and several diabase dikes. The vein material, where the walls are of diabase, consists in part of a fine-grained mixture of quartz and pink and buff dolomite and is mineralized in an irregular manner with microscopically intergrown aggregates of silver, argentite, galena, zinc blende, niccolite, cobaltite, smaltite, domeykite, chalcopyrite and other minerals. This is the only primary silver deposit known in the region. There is a secondary deposit consisting of materials that might have been derived from the primary deposit. The native silver occurs in the form of wires, leaves, nuggets in replacement bodies, veins, vug linings, and cleavage cracks.

We first learned of the Silver Islet mine from Mr. Julian Cross of Port Arthur, Ontario, when we visited him seeking information about the Steep Rock iron development in which he has had such an important part. During our talk with him he also told us something of the Silver Islet mine. His statement that ore from this mine had been sent to our city of Wyandotte, Michigan, to be refined aroused our interest to learn more of this venture.

Most of our information on the history of the mine comes from a paper written by John H. Forster in 1889. It is believed that the island was first visited in the early 1840's by an exploring party whose boat was driven on it in a storm. They were attracted by a wide vein of glittering spar crossing the west end of the island. Further examination showed it to be full of native silver which was collected on the spot. In 1846 an attempt was made to mine the vein but it was given up as impractical, but in 1868 and 1869 over $25,000 worth of ore was taken out.

In 1870 a group of Michigan men headed by Captain William B. Frue of Houghton purchased the island and 108,000 acres of the mainland. On September 1 of that year 34 highly skilled men with mine machinery, supplies and a raft of 20,000 feet of square timber landed at Silver Islet Landing. After erecting shelter tents and a boarding house on the mainland, they began construction of cribs in the little harbor behind Burnt Island. The silver vein where it crossed the island was under four feet of water. Since a mine shaft had to be sunk on the vein, the first step was to build a coffer dam and a defensive breakwater to cover the whole island. In 30 days 460 feet of cribbing, 13 feet high, thoroughly bolted and tied had been framed, towed out, sunk and filled with stone quarried on the mainland. Inside this protective cribbing, a coffer dam of wood and clay was

constructed. It covered a length of 70 feet on the line of the vein with space for the shaft. The water was removed by a steam syphon. Mining began on the 5th of October. Three weeks later a storm carried away some of the cribbing and damaged the coffer dam and the pit was filled with rock washed out of the cribs. It took until the 18th of November to make repairs and resume mining. However when the last shipment was made for the season, ore valued at $108,000 had been mined.

Meanwhile on the 3rd of November, the wives and children of the men, along with their household goods and supplies left Houghton, Michigan, on an old side wheeler boat. They encountered severe storms, snow and cold on the lake and had a very miserable journey, arriving on Nov. 6 at Silver Islet Landing. The men had been so busy working on the mine that little had been done to provide shelter for them. One large log house, partially completed, was used to take care of as many as possible while the rest had

Map of the western end of Lake Superior showing location of Silver Islet.

to put up in tents. When log cabins were finally built, the women and children were kept busy stuffing the cracks with moss to keep out the cold. Since the cabins were built of green logs, the heat of the stoves caused unpleasant dripping of moisture during the day and when the fires were out the vapor turned to frost and ice. The snow averaged two and one-half feet in depth the entire winter. Provisions were none too plentiful, fresh meat was scarce but plenty of fish were taken through the ice. It was evidently a long and tedious winter for these women and children.

Again during the winter the work on the island was damaged by storms. All the timber in the area was used up so that they had to send out a search party to look for more. After two days' search a fine grove of pine was located on the northwest slope of Thunder Cape. Repairs had to be made in the zero weather, working in ice-laden water and using only small boats to carry the men from the islet to the shore. The worst time came during the month of March when storm followed storm furiously and crib after crib was put in only to be carried away. During that month 550 feet of cribs containing 50,000 feet of square timber and 6000 cords of stone were lost. So once more the ruined works were repaired by substantial cribbing having a base of 75 feet and strongly framed by five separate bulkheads. The breakwater was built up to 18 feet above the surface of the water. During later storms the waves would roll up over the breakwater but without damage. They at last found the maximum force of wind and waves on that shore but it was a costly experience. The little island had been built up to an area of five acres.

At the time of the completion of these repairs, the shaft in the mine had reached a depth of 50 feet. A system of watertight timbering was introduced which enclosed two air shafts and a working shaft. The space between the timber work and the coffer dam was filled with stone and cement, making the filling a solid mass, as firm as the underlying rock. An engine house, shaft house and other buildings were erected on the island. The miners, engineer and boarding house man lived on the island.

Ore shipped during the summer of 1871 amounted to nearly $1,000,000 but for the year 1872 it dropped to $600,000. In 1875 a stamp mill was built on the west side of the village on the mainland. It contained 50 stamps, five in a battery. It also had 24 Frue vanners to dress the ore. Stamp rock ore yielded about 20 oz. of silver to a ton of rock. However each year the amount of silver recovered decreased and the company was beset with financial difficulties. In 1876 a new company was formed and in 1878 a second bonanza was located which yielded 800,000 ounces of silver. But again the amount of silver mined decreased each year and in the Fall of 1883 the needed coal supply failed to arrive and work was suspended early in 1884 and the mine was abandoned. Since then the mine has been worked several times, the last being in 1922 when about $10,000 worth of ore was taken out at a cost of $84,000 for pumping and repairs. Altogether the mine has yielded nearly $4,000,000 worth of silver. The shaft had been sunk to a depth of 1230 feet.

Mr. Forster gives this description of the mine: "In the mine on the islet, the paying portion of the vein did not exceed 200 feet in length; but it was phenomenal in richness. Masses of silver of more than 100 pounds in weight were produced. Beautiful cabinet specimens of silver and other minerals were very common. When I visited the mine in the summer of 1871, coming from the copper mines, I was astonished at the amount of silver that was coming up from the shaft. It seemed as plentiful as the barrel copper, a much less valuable mineral, that we were hoisting from our own shafts."

One of the men who invested in the original Michigan company was Captain Eber Ward of Detroit. He was a man of varied financial interests and owned the Eureka Iron and Steel Company and the Detroit Shipbuilding Company, both of Wyandotte, Mich. Captain Ward was instrumental in bringing the silver smelt-

ing industry to Wyandotte also. The works of the Wyandotte Silver Smelting Company were built in 1871 next to the shipbuilding company. There were three large buildings, 50 feet in width, 300 feet in length and two stories high with 25 feet between the buildings. They were located between the main street of Wyandotte and the Detroit River in the south end of the town. The buildings were constructed of massive limestone from the Sibley quarry. The ore from the Silver Islet mine was brought here for smelting and refining. During the winter months when this ore could not be shipped in, refining of Western ore was tried but that proved unprofitable and was abandoned. The plant was shut down in 1878 and sold. During World War I, the government razed the buildings to make way for the large plant of the United States Shipbuilding Company. No trace of this remains and the site today is occupied by a du Pont plant for making chlorinated solvents. However we did have the pleasure of talking with Mr. George Bryan, age 91, of Wyandotte who had worked for the smelting company as a boy and who still remembers details of the plant and its operation.

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T. L. Tanton, Fort William and Port Arthur, and Thunder Cape Map-areas, Thunder Bay District, Ontario Memoir 167, Geological Survey, Dept. of Mines, Canada, 1931.

John H. Forster, Papers of Michigan Pioneer and Historical Collections, 1889.

The Silver Islet Consolidated Mining and Lands Co., Lake Superior. Report of Directors to Stockholders' Meeting, February 4, 1879.

Old silver mine buildings on Silver Islet, Thunder Bay, Lake Superior. These buildings have since collapsed.

TRIP TO COLORADO — PART 2

By PETER ZODAC

Editor, Rocks and Minerals

Wednesday, June 25, 1952
(5th Day of Trip)

This is our first morning in Colorado and for the next few days the Editor and his cousin, Royce Phillips (of Washington, D.C.), will be touring the State. We had headed for Denver the day before because Royce's sister, Mrs. Roy Clark, lives there.

2199.0 miles — Colfax Motor Court, 8:15 a.m., in Aurora, Colo. Aurora is a suburb of Denver.

Our destination for today would be Canon City, about 150 miles away, so there was no use in rushing off early. We had breakfast at the Clark's and then with little Patty Lou Clark as a guide, Royce and I headed for a brief tour of Denver. We stopped first at the City Park Museum where a very fine mineral collection was seen, then to the State Capitol (large gray granite building) and the State Museum which houses an unusually fine mineral collection (chiefly from Colorado localities). Colfax Avenue, which runs east and west, is Denver's most important street.

We returned to Aurora, and after a very nice dinner at the Clark's, Royce and I started off, alone, for Canon City, but we would return in a few days.

2214.0 miles—Clark's home in Aurora. We headed southwest, went by Lowry Field (U. S. Army) in the city, through Englewood where we got on U. S. 85 and U. S. 87 and in Littleton (2232.0 miles) stopped for a brief visit with Mr. and Mrs. V. Howard (Mrs. Howard is Royce's aunt). The Howards are two nice people who make you feel right at home.

We continued our journey on U. S. 85 and U. S. 87 going through Sedalia and Castle Rock (nice little town).

2366.0 miles—We keep to right on Colo. 393.

2367.0 miles—We turn right in Larkspur at the R. R. Station as Royce wanted to see something—he had been here before.

2368.0 miles—We turn around as it is not the right road. Lots of massive smoky quartz in the terrain here.

2369.0 miles—R. R. Station at Larkspur—we turn right.

2382.0 miles—Junction with U. S. 85 and U. S. 87.

2390.0 miles — Good view of Pikes Peak—to right.

2398.0 miles—Colorado Springs—city limits.

2400.0 miles—Palmer Hall (Geology Building) of Colorado College in Colorado Springs. We stopped here hoping that I would meet Prof. Richard M. Pearl with whom I've had extensive correspondence but never met personally. To my sincere regret he was not in. The pleasant young lady at the desk gave me his phone number and street address—I tried to phone him but no answer and we continued on our journey, thinking he was out of town. (Two days later when I met him in Canon City I learned that when I tried to call him, he and Mrs. Pearl were outside bidding good bye to some friends).

Colorado Springs is a beautiful city and its main street is Nevada on which is located (at its northern end) Colorado College.

2403.0 miles—We take Colo. 115 to right.

2423.0 miles—Fremont County line.

2427.0 miles—Salt Canyon, off to the right according to a sign here.

2437.0 miles—Junction with U. S. 50 (on left).

2447.0 miles—Canon City limits.

2449.0 miles—Canon Hotel in Canon City, where we had a reservation. It was 5:15 p.m. when we arrived and we were both charmed by the little city—it was such a nice, clean and beautiful town—altitude 5,344 feet. The hotel too, was very nice; we had room 212—large, airy and most comfortable so that we just made ourselves at home. After the eve-

ning meal, taken at the little restaurant across the street (very good, too), we toured the city afoot. We walked up one side of the business section and then down the other examining the many displays in the store windows. Soon we noticed and on checking found that every establishment had on a window the following inscription—WELCOME MINERAL SOCIETIES—(a large crystal and a mineral pick were shown also). They had been stenciled in brown and made an attractive appearance. The reason for these inscriptions was that tomorrow, Thursday, June 26, 1952, the Rocky Mt. Federation of Mineral Societies was opening a three-day convention in the city. It was this convention which brought us to Canon City. See "Rocky Mountain Convention at Canon City, Colo." by Peter Zodac, in R & M, July-August 1952, pp. 370-378. I will say no more about the convention except to point out that it was not only most successful but an item in one of the local papers stated it was the largest group ever assembled in Fremont County (Canon City is its County Seat).

(Mileage for the day—150)

Thursday, June 26, 1952
(6th Day of Trip)

In morning, attended the convention he'd in the high school.

Late in the afternoon Royce and I went on a trip to world famous Royal Gorge, 13 miles west of Canon City.

2449.0 miles—Hotel Canon.

2449.5 miles — State Penitentiary (right)—on U. S. 50.

2457.0 miles—Keep left at Y—U. S. 50 goes straight ahead.

2462.0 miles—Park — top of Royal Gorge, — Entry fee $3.30 (for two). Perhaps a little information on the Gorge would be proper. The following is taken from COLORADO GEM TRAILS, second Ed., by Richard M. Pearl, p. 118 (Published 1953 by the Mineral Book Co., Box 183, Colorado Springs, Colo.)

"The Royal Gorge itself is only a part, but the most spectacular part, of the Grand Canyon of the Arkansas, which extends for 34 miles through Fremont County. The river here has sawed its way into some of the oldest rocks in Colorado to a sheer depth of 1,100 feet. The highest suspension bridge in the world takes motorists across the Arkansas River, 1,053 feet above the bottom of the canyon. Through the gorge run the tracks of the Denver and Rio Grande Western Railroad, and so narrow are the walls—not much wider than the stream, and in some places even overhanging—that the train must travel some of the distance on the Hanging Bridge, built above the river and parallel to it, supported from the sides of the canyon."

We first took a ride down into the Gorge, via the incline railway. To me, an ex-mining engineer where in deep shafts they "cut" the rope to drop you down in a hurry or jerk you up so fast that your teeth rattle all the way up, the ride down and up at the Royal Gorge was pitifully slow—why I could have climbed up faster! But once down in the Gorge, you were in another world. As you get off the incline, a small refreshment booth is right in front of you (it is in a dangerous spot—should be to the right more. Suppose—it could happen—one of the "cars" should break loose and come hurtling down—right on the booth). You are on a small platform, you look below, to the right, and there is the single track Rio Grande R. R. (underneath you) with its marvellous hanging bridge, 100 feet away or so. You look to your left, and there is the white, foaming Arkansas River rushing wildly before you. You look around and up and you awed by the stupendous vertical walls of red granite rising 1,000 feet above you! You wonder what the black cable may be, far above you stretching from rim to rim, until it dawns on you that it's the famed suspension bridge and on looking intently you see tiny moving objects—cars. You see people down along the river, and you recall reading in the circular, handed you when you bought the tickets, that you are welcomed to all the rocks you can carry. Here is the item, word for word.

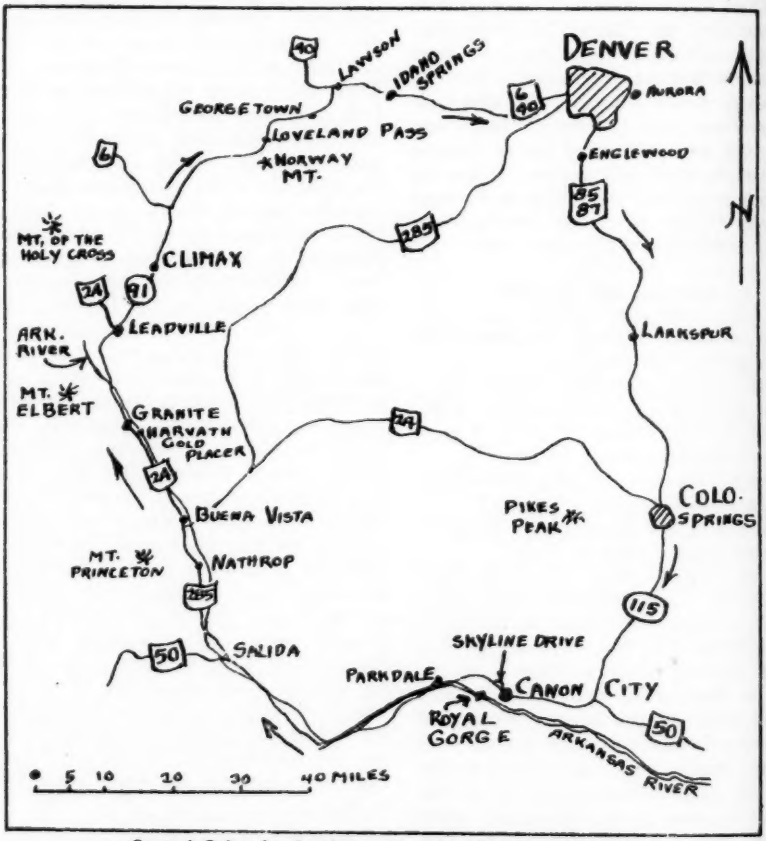
"Help yourself to Rocks. Worn away through gigantic cliffs of granite in the

past at the rate of 400 feet each million years the Royal Gorge is one of the world's most famous chasms and was worn away by erosion. Each year thousands of visitors aid Mother Nature in making the Gorge deeper—you're welcome to all you can carry."

This is the first instance that was brought to my attention, I believe, where you are encouraged to collect "rocks" at a famous locality.

I had some cloth bags with me, also a mineral hammer, and so I rushed down to the river's edge—walked along the track for about 500 feet (away from the hanging bridge as that section was closed). There were lots of loose rocks, apparently blasted out of the side walls when the railroad was put through, and I soon collected an assortment. Some sand was also available along the river bank, and I got a sample of it. While we were collecting, a fairly long freight train went by. As I was heading back for the platform, I happened to think—how wide is the gorge at the bottom? It's about 100 feet wide in a winding twisting canyon whose vertical walls are 1,000 feet high!

When we reached the top, we headed for the car and then rode over the bridge which we crossed very slowly—other cars did the same. When we got to the center of the bridge, I looked down—it was an *awful* drop to the bottom! I thought the



Central Colorado showing route taken by the author and his companion — starting from and ending in Denver.

road continued on to a highway but it did no such thing. It wound to the left to an observation point—we got out for a look-see—a very fine view of the canyon in both directions—and then back to the bridge again. The bridge was just a feature for the canyon. Along both sides of the bridge were State flags—flying in the breeze—but somehow I missed seeing New York's—both going and coming.

Back on the other side we parked the car again and got out to tour the souvenir and refreshments stands. We visited here some more observation spots and then back into the car and we were off.

Minerals collected at the bottom of the gorge, all in red granite, were: biotite (tiny black flakes), epidote (green), with black hornblende, garnet (almandite) small red crystals, microcline (coarse xline reddish masses), muscovite (lustrous silvery flakes).

Minerals collected at the main observation point, at end of bridge, were: muscovite, nice specimens in red granite and as loose plates; and smoky quartz masses.

2468.0 miles—We turn right on U. S. 50 heading for Canon City.

2472.0 miles—We turn left on one way Skyline Drive, a tourist attraction. It is a free drive, built by prison labor, follows the top of a limestone hogback for 3 miles and gives fine views of city, valley and distant mountains. I am glad I took the trip but have no desire to repeat it. Though the scenery from many spots is breath-taking, your heart stops beating more than once when you come to stretches hundreds of feet long, on the very top of nowhere, the road only about 8 feet wide, on both sides nothing but air for hundreds of feet down! It doesn't do your heart any good either to have the road, in such places, dip down and up and you go sailing like on a roller coaster praying that at each apex the road continues straight ahead. Colorado is a wonderful state, with beautiful scenery, fine climate and the nicest of people, but the Skyline Drive is the "worst" road I ever was on and I have been on many "bum" ones. The only good feature about the Skyline Drive is that it is good for sinners—when you really get on it you suddenly discover that you know a lot of prayers—old, unused, and new ones—and how you do say them!

2474.5 miles—Canon City again.

As an ex-mining engineer, my one ambition is to go underground in every state of the Union—in a mine, cave, railroad or vehicular tunnels. I had mentioned this to Royce and we were both on the lookout for a chance to go underground. Of the states gone through on the trip, I had been underground in everyone except Indiana, Kansas and now Colorado. Royce had a surprise for me. He had spotted a post card in Canon City this morning showing a view of Tunnel Road (with a tunnel), learned it was nearby, got directions, and now we were off to see it.

2474.5 miles — Canon City (end of Skyline Drive).

2476.0 miles—Penitentiary again.

2477.0 miles—Turn left on a dirt road (Tunnel Road).

2477.8 miles—First tunnel (50 feet long); 100 feet further was the second tunnel (25 feet long), and 300 feet further was the third and last tunnel (300 feet long). We continued up the road for at least a mile—a narrow, winding dirt road cut through red granite in the Grand Canyon of the Arkansas River which was about 300 feet to left and possibly 150 feet lower. As the road was getting narrower and poorer and seemed to be going nowhere, we turned around (at mileage 2479). When we reached the longest tunnel I got out to examine a 15-foot black dike which was here exposed—I then walked through the tunnel and noted that more dikes were present inside but much narrower. A number of small tunnels or caves had been seen along the road and out of curiosity, I got out to examine one—wondering if it was a tunnel, cave, or natural passage of some sort. It turned out to be a tunnel and in it was a big pipe—later I learned that this road and tunnels was an abandoned irrigation project. Though the Tunnel Road was a narrow one, it could be traversed without difficulty and we had it all to ourselves. It was a "safe" road

compared with the Skyline Drive.

2481.5 miles — Back in Canon City again and this time we decided to go south, for a few miles.

2481.7 miles—We cross the Arkansas River—100 feet wide and tame—as it was out of the gorge.

2483.0 miles — Prospect Heights, a small community. Here to my amazement was an abandoned bituminous coal mine—looked recently abandoned too. A small tipple, a filled up steep shaft (seemed to dip about 80°) and a small pile of coal—was all that remained. I collected a sample of the coal, lustrous black but fragile mass. Somehow we went no further, but turned around and headed back for Canon City and the hotel.

2484.0 miles—Canon Hotel.

(mileage for the day—35)

Friday, June 27, 1952
(7th Day of Trip)

Spent the entire day at the Convention.

Saturday, June 28, 1952
(8th Day of Trip)

This is our last day in Canon City as we had to be on our way. We checked out of the hotel about 8:30 a.m., and it was with some regret that we did this as both the hotel and the little city were unusually nice and our stay was a most pleasant one. We headed westward from Canon City on U. S. 50.

2487.0 miles — Canon Hotel, Canon City.

2487.5 miles—Prison on right.

2488.0 miles—Tunnel Road—left.

2490.0 miles—Skyline Drive (entrance)—right.

2494.0 miles—Snow seen on tops of mountains—way off to left.

2495.0 miles — Road left to Royal Gorge.

2498.0 miles—Bridge over Arkansas River—Parkdale to right; this may probably be the west end of the Royal Gorge. From here we follow the Arkansas River (on right) for many miles.

2499.0 miles—25 feet to right is the Arkansas River (50 feet wide). Rio Grande R. R. on other side.

2502.0 miles — Beg. Arkansas River Canyon—300 feet wide.

2504.0 miles—Bakers Gulch in Canyon.

2513.0 miles — Texas Creek (small settlement); Colo. 69 goes off to left.

2515.0 miles—Sand Gulch to left. I would have liked to stop and collect some sand which evidently must have been present and also to examine a gulch which as yet I never visited, but—we went past the gulch so fast I was lucky to get the mileage and did not want to turn around.

2520.0 miles—Cotopaxi—small settlement.

2524.0 miles—End of canyon, as country opens up wide.

2540.0 miles—Rio Grande train went by—on right.

2541.0 miles—Chaffee County line on U. S. 50.

2544.0 miles—U. S. 50 swings to left; we take Colo. 291 to right.

2544.5 miles — Salida, a nice town. Here we stopped at Tuttle's Trading Post to purchase some curios. Famous copper mine near here but we had no time to look for it.

2546.0 miles — We cross Arkansas River again—100 feet wide.

2547.0 miles—String of snow capped mountains off to left.

2552.0 miles—Arkansas River again crossed—50 feet wide.

2555.0 miles—Junction with U. S. 285 (on left).

2563.0 miles—Nathrop—a locality famous for garnet (spessartite) and topaz, but we came upon the site so quickly that we went by it before I realized it was a locality. At any rate all we saw of the town was a small wooden building (Post Office) to left of road.

2568.0 miles — We saw some small granite boulders to left of road and stopped to examine them. The boulders contained thin veins of green xline epidote.

2568.5 miles—U. S. 24 joins on right.

2570.0 miles—Mt. Princeton, 14,196 feet high, off to left. Had a good view of it—(sign here).

2571.0 miles — Buena Vista — small settlement, on U. S. 24.

2576.0 miles—Road cut through a mass of pebbles—cut is 200 feet long, 25 feet

high (Arkansas River 50 feet to right).

2581.0 miles—Entering San Isabel National Forest.

2584.0 miles — Harvath gold placer. Here according to signs one could pan for gold in the nearby Arkansas River for only 25 cents (cost for renting a gold pan). A number of cars were parked and out of curiosity we stopped to join the group, which could be seen on the bank of the river, 200 feet to right. We parked to the left of the road, at the stand where a young girl rented me a pan for 25 cents (Royce didn't wane one). Then we walked over to the river where John A. Harvath was busy showing the group where and how to pan. When my turn came he told me I had a choice—panning in the river (free) but gold not guaranteed, or sluicing in the river bank where he guaranteed gold would be found but there was a $2 charge for this. I choose sluicing and soon I was hard at work with a pick, shovel and wheelbarrow, digging away in the boulder-pebble ground. It was hard work and were it not that I wanted the experience of collecting my own gold, I would have quit within a few minutes. After 15 or 20 minutes of hard work, I got the sluice box filled and then the washing began—water being pumped into the sluice. Out of all that material, the amount of gold recovered was a tiny amount (worth about 30 cents). Mr. Harvath placed this gold, with some of its accompanying black sand (magnetite) in a glass vial and gave it to me. I now treasure this vial as an emblem of my gold placering experience.

Mr. Harvath, who told us he was of Hungarian descent, was a most pleasant individual and I enjoyed my mining experience and in meeting him. He has had many years of gold mining experience and his gold camp is an attractive tourist feature. For those who may like to contact him, his name and address are:

John A. Harvath, Gold Camp, Box 404, Buena Vista, Colo.

2588.0 miles—Granite (very small).

2590.0 miles—Lake County line on U. S. 24.

2594.0 miles—Lots of snow on mountains to left and to right.

2599.0 miles—Mt. Elbert to left (heavily snow covered). Highest point in Colorado (14,431 feet)—good view of it. (Sign here).

2604.0 miles—American Smelting and Refining Co.—big plant to left.

2605.0 miles — Courthouse (left) in Leadville. We ate lunch here in the "Golden Burro" Restaurant. Leadville, a famous lead mining locality, is a poor looking town. Its many unpainted building look like shacks. No dumps being visible nearby, we made no effort to collect any minerals.

2607.0 miles—We keep right on Colorado 91.

2612.0 miles—We noticed a small excavation about 50 feet to left and stopped to examine it. It contained red granite rock.

2619.0 miles—Climax, Colo. Here is located a huge molybdenite mine—largest in the world—way up in the mountains. The entire mining property—all fenced in—is Climax. We stopped at the gate, just to see if some information on the mine's minerals could be obtained, and the friendly gateman listed a few minerals. Then, on his own initiative, he called up a Mr. Jones for additional information and to my delight, Mr. Jones invited me to call on him. We were given a pass and a large numbered card (for our windshield) and directions for reaching the main office where we would find, Mr. Jones. Just before starting off I mentioned something about the nearby snow which was all around, and the gateman casually remarked that the last snow fall was on June 1.

We drove about ½ mile—saw many buildings—and finally reached the office, a large and spacious building. Here we met Mr. Ernest Jones, a most friendly individual, who welcomed us cordially and after the greetings were over he suggested that we should meet their chief geologist, Mr. Fred Howell, in a neighboring room who could give us all the information we wanted. He took us to Mr. Howell, where again we were received cordially. Mr. Howell not only showed us many interesting minerals but gave me a number of them as well. Here

are some of the minerals seen, all of which come from the mine.

Calcite: white, xled.

Cassiterite: extremely fine grained in rock.

Columbite: occurs microscopically in rock.

Ferrimolybdite: yellowish coating on molybdenite and on rock.

Fluorite: greenish and purplish, xled in large vug from fault zone.

Galena: fine grained in quartz.

Kaolinite: white earthy mass.

Magnesite: tiny white rhombohedrons.

Molybdenite: lead-gray veinlets in granite.

Monazite: microscopic in rock.

Pyrite: large lustrous cube—5" square.

Rhodochrosite: tiny rhombohedrons.

Sphalerite: black, massive.

Topaz: microscopic in rock.

Wolframite: black, finely disseminated up to fairly coarse xls.

Rocks of the mine are—granite, porphyry and schist.

I had a most delightful visit with Mr. Howell, and to add to my pleasure he told me that it was R & M which years ago got him interested in minerals. "Drop in to see us when you are out this way again," were his parting words. On the way out, I stopped in Mr. Jones' office to say good-bye. "Drop in to see us when you are out this way again," were his identical words.

2620.0 miles—Gate again. Here we turned right and continued our journey. About 300 feet past the gate a number of cars were parked which puzzled us but not until we had gone some distance did it dawn on us that the cars were parked at Fremont Pass (11,318 feet).

2622.0 miles—Mt. of the Holy Cross, off to left (sign here).

2632.0 miles—Junction with U. S. 6 (on left). When I saw U. S. 6 I almost got homesick, as this route goes through my hometown of Peekskill, N. Y.

2646.0 miles—Snake River crossed (30 feet wide).

2651.0 miles—Spring to left—did not stop.

2654.0 miles — Arapahoe Chair Lift (to right). The lift was about 200 feet to the right and without saying a word, Royce drove over to it. "Let's take a ride to the top of the mountain," was his comment to me. I was willing and after a little delay we were off (we were the only visitors and the crew had to be contacted). The fare was $1.50 per person, the lift (in 2 sections) was 2905 feet (vertical rise 700 feet) up Norway Mt. Royce got the first chair and I got the second (chairs are for one person only) and we were slowly carried up the mountain—averaging about 50 feet above the ground. The ride was most interesting (it was my first chair ride) and I was all eyes as we slowly ascended the steep mountain. Snow was all around and as it was melting fast the water ran down in fairly heavy streams. There were many trees along the first lift, but above that—the mountain was all bare. On the way up I saw lots of green epidote and on the second lift the mineral was so plentiful and in spots so bright green, I almost jumped out—so anxious was I to obtain specimens. When I got off at the end of the lift, I made a dash for the nearest epidote but stopped abruptly, dismayed, confused, and bewildered—it wasn't epidote at all, but bright green lichens on rock! Was I disappointed!

The very top of the mountain was about 300 feet further up and we climbed up to it (walking through 100 feet of snow 1 foot deep). We had a nice view from the top of Norway Mt., but it was rather an odd experience standing on top of a high bare mountain with heavy snow all around—and we were in short sleeves because it was so warm! Rock was all around us but nowhere more than a few inches above the ground and I broke off some pieces—the following minerals were found—all on the extreme top of the mountain:

Albite: white with massive smoky quartz.

Amphibole (*Hornblende*): dark black-green with a little black biotite.

Quartz (*Milky*): massive.

We spent about ½ hour on top of the mountain and then we descended to our

car and continued the journey. There were still no visitors—we had had the mountain to ourselves.

2658.0 miles—Top of Loveland Pass on U. S. 6. This is the second highest pass in Colorado, its elevation is 11,992 feet; it is also the Continental Divide. Many cars were parked here and we parked also to join the group who were admiring the good views. Two signs (10 feet apart) are here on the right edge of the road. The signs read:

Continental Divide
Loveland Pass
Elev. 11,992 ft.

Atlantic Ocean Watershed	Pacific Ocean Watershed	Clear Creek Co. 62 M Denver	Summit Co. Dillon 15 M

U. S. 6

Royce suggested that we should climb the mountain (back of the signs) for at least 8 feet in height so we can say we have been up at least 12,000 feet. We felt no discomfort from the high attitude (it was the highest elevation I ever reached—I doubt if I ever reached this height on my many plane rides.

I collected two granite specimens at the sign (but in Clear Creek County).

Lots of snow here and all around. Scenery up to and then down from Loveland Pass, very, very beautiful.

2671.0 miles—Silver Plume—a silver mining camp.

2674.0 miles—Marker here (Georgetown Loop).

Between Georgetown and Silver Plume was once a famous narrow-gauge railroad, known as the Georgetown Loop (Colorado and Southern R. R.) which climbed the steep slopes by circling back and crossing over itself on a high trestle. The railroad was abandoned about 30 years ago.

2675.0 miles—Georgetown — (Courthouse on right).

2679.0 miles—U. S. 40 joins on left.

2680.0 miles—Red Elephant Mine (to left). This is a gold-silver-lead-zinc mine in Lawson, Colo., and is opened to the public—$1.00 per person to visit it. The tour is mostly through the mill plus a short trip into the mine, via tunnel (200 feet to left). We stopped as I wanted to visit a gold mine in Colorado. The tour was conducted by a young boy about 14 years of age, who was shocked when I did not want to visit the mill. "Just take me in the mine — that will be enough," I told him.

Royce wasn't interested in visiting the mine—he dropped me off and went on ahead to town as he had an important telegram to send. We had to climb up a little embankment and there before us was a miners car (equipped with seats and railings) and pulled by a small compressed air engine. After filling the engine with air, we entered the tunnel (the engine was operated by a man in his 20's). Just as we were entering the tunnel, I noticed the rock at the portal was all gneiss. We went in at least 1,000 feet, the youngster stopping the engine every now and then to point out some interesting spots (I was the only passenger) and even breaking off specimens here and there. The tunnel was not a good place for specimens (they knew I was a collector) so they promised me some material when the tour was over. After we went in about 1,000 feet (the tunnel went in further), the engine was reversed and we rolled outward. The tour over, the men took me to a building near the portal (entrance to a tunnel) and from a pile of minerals they picked out a nice specimen for me. The specimen was a coarse xline, lustrous lead-gray galena, with pyrite (3x4 inches in size) and worth more than the fee. From the dump I collected greenish epidote in gneiss, also pinkish gneiss and dark gray gneiss.

The trip through the mine was most interesting and I enjoyed it immensely. When I reached the road, there was Royce awaiting me.

2682.0 miles—Dumont.

2683.0 miles—Front Range Mines Inc. (Did not stop).

2686.0 miles—Idaho Springs. Scenery beautiful from Georgetown to Idaho Springs and many small gold mines were seen along the way.

2688.0 miles—Argo Tunnel Mine (left).

2688.5 miles — Wells Curio Store (right).

2689.5 miles—Clear Creek crossed—50 feet wide.

2691.0 miles—Dixie Gold Mine (left) —open to public—did not stop—as we were anxious to keep going.

2694.0 miles — End of the rugged mountains—we now are in open country.

2706.0 miles—We turned left on a dirt road heading for Mother Cabrini Shrine about which I had read a lot. The road ascended and twisted around a hill and finally (2708.0) we reached the Shrine, set in a nice isolated area. We were the only visitors. Here at the end of the road were lots of smoky quartz masses that had been exposed due to grading the dirt road.

On leaving the Shrine, we had a beautiful view of Denver (from the hill near the Shrine).

2709.0 miles—Turn left on U. S. 6.

2718.0 miles—Lakewood.

2724.0 miles—U. S. Mint in Denver.

2724.5 miles—Hotel Argonaut in Denver. Here I got off and registered for the night—hotel was crowded but I got a room (small but nice); Royce went on alone to Aurora where he would spend the night at his sister's (Mrs. Roy Clark) home.

(Mileage for the day—237.5)

Sunday, June 29, 1952
(9th Day of Trip)

The day was spent quietly in Denver. In the morning I was on my own and spent most of it roaming around the State Capitol (across the street from the hotel) and through the nearby streets. About 12:30 p.m. Royce and his brother-in-law, Roy Clark with his two girls (Pamela and Patty) called for me and I spent the rest of the day at the Clark's home in Aurora. Here I had a most enjoyable afternoon and especially with the girls (I love girls)—Pamela is only two years old while Patty is 9 but they are two of the sweetest girls imaginable. Patty and her girl friend (Trona Scott), another sweet girl also 9, took me to a nearby school ground where they proceeded to do some tricks on the circular swings. Trona went around 15 times, Patty, 12, but I couldn't make it even once. To compensate the girls for my poor showing I took them to an ice cream parlor and treated each to a banana split—the first one they ever had, so they told me! From then on—I was their hero!

I thought we would be leaving Denver this afternoon but Royce decided to spend another night here which was agreeable to me. That night we all visited City Park to witness the colored fountain in City Park Lake. We also had a boat ride on the lake cruiser, Miss Denver (15 cents per person).

Monday, June 30, 1952
(10th Day of Trip)

I spent most of the morning at the Colorado State Museum (across the street from the Capitol) where I inspected the very fine mineral collection on the second floor (this department is closed on Sundays). It was a morning well spent but not long enough to give the minerals the attention they deserved. I noticed one whole case of good miscellaneous minerals from everywhere, carried the name of Robert Roots, one of our valued subscribers. Many other minerals carried labels of their donors, all subscribers for R & M.

At 12:15 p.m. I checked out of the hotel and 15 minutes later Royce, his mother, sister (Maravene) and her two girls picked me up and we headed southward for Littleton to have dinner with Mr. and Mrs. V. Howard (Mrs. Howard is Royce's aunt). Here we spent an enjoyable three hours, then headed back to Denver and the Clark's home in Aurora (suburb of Denver).

THE MIDWEST FEDERATION CONVENTION

ST. LOUIS, MO., 1953

A city of the old (1763) and the new (1953) St. Louis was host to the Midwest Federation of mineralogical and geological societies, June 26th through the 28th. The city spreads along the river for 19 miles and is about 7 miles 'deep.' The weather was hot and sunny but guests enjoyed some of the attractions of the city and the cool comfort of air-conditioned hotels, as well as the program of the convention.

Mr. William Allaway, president of the Midwest Federation, and his executive committee are proud of the planning done by the St. Louis Gem and Mineral Society. The able convention chairman, Kenneth Gibbons, secured the facilities of the St. Louis University High School, and the entire basement was at the Federation's disposal for commercial and non-commercial exhibit space, with classrooms upstairs for lectures. One half of the 230 by 72 foot hall was occupied by dealers showing varied materials from rough rock to precious gems, machinery and lapidary supplies. Dealers came from far and near —all were friendly and interesting and all had much to share for a price with us for our collections or hobby work. The crowds around the booths indicated interests, needs and desires and the persons on each side of the counter seemed to be doing all right.

The society exhibits were not as large as at some other Midwest shows but they were well displayed as to materials, the quality being exceptionally fine. There was a case of relatively rare specimens of great mineralogical interest from foreign countries, all perfect in quality—many crystal groups, and a display of skillfully crafted and cleverly designed jewelry set with fossils and semi-precious stones, shown by members of the Michigan Mineralogical Society. A clever 'Lazy Susan' idea display of the Akron Mineral Society showed beautifully polished agate specimens and many other minerals, revolving slowly so all could be easily seen. Some friends from Washington had interesting rough and polished specimens and a fossilized dragon fly which was worthy of much attention. The Chicago Rocks and Minerals Society had the largest society display and it included several suites of minerals, such as hematite, fluorite, cassiterite, datolite, and other varied exhibits including carvings and jewelry—among which was the prize winning jewelry of the Cookes. There were unusual fossils and petrified woods shown by members of the Central Iowa Mineral Society. A display of perfectly polished cabochons by a Minnesota Mineral Club member added beauty and teased many a lapidary as to the 'how'. The St. Louis members showed interesting displays of iris agate and transparencies, some other minerals and a dainty tourmaline tree. There were several tables with trading materials. The St. Louis University had an educational map and mineral display which attracted much attention. The exhibits of all, including those not specifically mentioned, added much to the conversation and interest, and the techniques used in cabinet and exhibit set ups are worthy of mention. There were many unusual methods used.

The lectures were all good and worthwhile. Dr. Albert Frank discussed the geology of the 1953 convention area; Dr. B. H. Wilson, the educational values of all earth sciences; John Mihelcic, the true value of a mineral collection as dependent on the material itself, the identification and the manner of preserving and displaying it; William Bingham, his own lapidary machinery designs; Dr. Garrett Muilenberg, the various well-known mineral localities in Missouri, particularly the zinc, barite, and calcite deposits; Dr. Gilbert Raasch, the interesting story of paleontology. Both the lectures and the field trips were well attended. Some of the notables were given mention in the newspaper during the convention. The days the exhibits were open to the public brought in many curious about mineralogy and they spent time chatting with exhibitors, and dealers.

The St. Louis Society did a grand job of hosting and the comforts of the guests was promoted by the convenience of the Snack Bar and the smiling courteous ladies in charge. The registering committee and reception booth staff were always on hand to help answer questions, find people, and see that everyone was happy. A folder of excellent maps and descriptions of collecting areas in Missouri was prepared and made available to the conventioneers by the field trip committee. The banquet was a gay affair with Mr. Elmer Headlee, the president of the St. Louis Mineral and Gem Society and the vice-president of the Midwest Federation as the jovial master of ceremonies. Mr. Headlee also had acted as the chief auctioneer, and under his hand the most common rock took on character. To all the hard working committees, hearty congratulations for making the invitation 'Meet Me In St. Louis' so worth while.

Mrs. Oriol Grand-Girard
Midwest Secretary

1953-54 OFFICERS OF THE MIDWEST FEDERATION

President: Herbert F. Grand-Girard, 817 Mulford St., Evanston, Ill.

Vice-Pres.: James William Bay, 518 Melborn, Dearborn, Mich.

Secretary: Mrs. Oriol Grand-Girard, 817 Mulford St., Evanston, Ill.

Treasurer: Marjorie A. Scanlon, 8403 South Langley Ave., Chicago 19, Ill.

Historian: Dr. Ben Hur Wilson, 406 Grove St., Joliet, Ill.

LOOKING BACK - - - -

Twenty-Five Years Ago in ROCKS AND MINERALS

September 1928 Issue

The new minerals of Katanga, by Edward Cahen, pp. 72-76. The Katanga District in the Belgian Congo, Africa, is famous for its minerals. The new minerals described by Mr. Cahen are janthinite, becquerelite, schoepite, curite, fourmarierite, soddyite, kasolite, sklodowskite, dumontite, dewindtite, and parsonite.

Some notes on the Butte, Mont., district, by R. F. H. Harter, pp. 78-82. Dr. Harter, a geologist-geophysicist, presented a most interesting article on the world famous mining district of Butte—"the richest hill in the world."

Stark's Knob, by C. A. Hartnagel, pp. 84-85. Mr. Hartnagel, then Assistant State Geologist of New York, contributed a most interesting article descriptive of the geologic features of Stark's Knob, the only volcano known to exist in the State of New York. A nice picture of Stark's Knob appears on the front cover. Stark's Knob is located about 2 miles north of Schuylerville, Saratoga County.

Mr. Hartnagel is still with us—but he is now a retired State Geologist.

Paleontology Department, conducted by Benjamin T. Diamond, pp. 86-87. Molluscoidea was featured in this issue.

Compilation of Gem Names, by Gilbert Hart, pp. 88-90. The 4th installation of the longest list of gem names ever printed up to 1928.

The Gem Department, conducted by Gilbert Hart, p. 90-91. Staurolite was the gem featured in this issue.

Micro-chemical study of the metallic ores and minerals, by Dr. H. C. Dake, pp. 96-97. A continuation of an intensely interesting series of articles on a new method of identifying minerals, in which the minerals are polished and etched with acids.

A TRIP THROUGH THE MOTHER LODE COUNTRY OF CALIFORNIA

By ROY PLUMMER
4720 Point Loma Avenue, San Diego 7, California

Our vacation trip, a visit with some old friends in Pine Grove, Calif., offered a fine opportunity to tour the old gold camps that were famous in the days of '49. We made our headquarters with our friends in Pine Grove, Steve and Marge Coffin. They were excellent hosts and guides and seemed to know every back road in the surrounding area.

The first two days were spent in Calaveras county and we visited Angels Camp, Copperopolis, Mokelumne Hill, San Andreas and West Point. A surprising number of operating mines were noted, some of them large and some merely a hole in the ground. We talked to Charlie, an old timer, and he had a good many tales to tell about the early days. He told how he used to operate an Arasta, an early Spanish device for milling quartz to extract the gold. This was sort of a merry-go-round where a large boulder was pulled around in a groove in solid granite. The thing was powered by a mule and the ore was crushed in the grove by the boulder. Charlie seemed to know more about present day deposits of gold in the area than he cared to tell—and he had some fine samples to show.

Angels Camp was named after a man who opened a trading post here in 1848. His partner, James Carson, discovered the rich Carson Hill Mine a few miles south. Angels Camp once had a large Chinese population. Copperopolis was founded in 1861 when copper was discovered. Ore was hauled to Stockton by ox cart and then shipped to Wales for reduction. Mokelumne Hill was once one of the wildest of the gold camps. The ground was so rich that claims were limited to sixteen square feet. San Andreas was founded in 1849 by the Mexicans. The town was burned in 1856 and again in 1863. West Point was named by Kit Carson in 1845, it being the westernmost point reached by him at that time. His campsite is still to be seen.

Untold millions have been taken from the quartz and placer mines of this county. Many millions are still hidden beneath the ground but rich pocket strikes are now rare. The gold must now be produced by modern scientific methods used by the large operators. It seemed that everyone we talked to in the country stores, gas stations and by-ways had his samples of gold to show but each was treasured by the owner and could not be bought for any price. We saw some beautiful specimens of leaf gold, wire gold and crystallized gold in nearly white quartz, also a nice display of placer nuggets and fine flour gold. We visited a hilltop mine being worked for tungsten. The dump was practically a solid mass of red/brown garnets and many good crystals and clusters were found. Rattlesnakes were thick and defied us as if they were guarding the treasures in the area.

In Pine Grove we visited half a day with George, a husky young fellow who spent half the year working in the woods felling trees for the lumber industry and the other half working his "hole in the ground." The hole however produced some rich gold in quartz. Beautiful specimens that are seldom to be seen. We managed to purchase a good number of these from him. George works his mine by himself using only a pick and shovel and some powder. We paid him a premium over the gold value of course and he promised to let us know when he has more. George must have a good thing because he was considering spending his full time at gold mining.

A visit to Volcano in Amador county was really something. Only three miles from Pine Grove, Volcano is situated at the bottom of a steep grade. In 1854 this was the largest city in California. We visited the famous St. George Hotel that is still in service. In the hotel we saw pictures of Volcano in its busy days.

Mine structures were all over the town and there were many hotels, saloons and stores in the old days. Some of the old buildings of native stone and iron doors are still standing. In the hotel were many mementos of the old days. On the walls hung ox yokes and bells, mineral specimens, photos of some of the old timers, early day lanterns and other gear. We talked to Georgia Gillick, an able guide to the area. Georgia seemed to know just about everything about Volcano. She guided us to the Masonic Cave where the first Masonic meetings were held. A beautiful spot and cool. We climbed down and up into its depths and imagined the activity there 100 years ago. Rumor has it that there is a huge cave system under Volcano with underground rivers and other mysteries.

Next we drove over the rugged mountain roads to Plymouth, Sutter Creek and Fiddletown, returning through Dry Town and Jackson which used to be called Botilleas. Generaliy when you speak of mining in this area gold is the subject but rockhound activity is noted all around. We visited two rock museums and a mineral dealer. Some pretty good plume type agate has recently been found near San Andreas and the local rockhounds are going to work on it. Near Volcano we hiked up a Creek where earlier placer operations had thrown up huge piles of boulders and pebbles on both banks. These piles are loaded with items of interest to any mineral collector. We brought home a huge boulder of brown jasper that had a nice pattern.

Heading back home we felt that our time had been entirely too short. A week is no time at all in such country. Some time we'll go back there for a more thorough look around.

NOVICE COLUMN

A suggestion has been received from Gordon ViGario, 2231 Pine St., Bakersfield, Calif., which we believe is worthy of being printed. The letter is dated May 7, 1953, and part of it reads:

"Many collectors have vast stockpiles of minerals that are too good to throw away and too common to put into showcases. For instance, a few days ago I cached about 40 such specimens in my garage. These minerals are doing me no good and no one else for that matter. There are, no doubt, many novice collectors who would be very glad to obtain these specimens to start their small collections. If I knew of someone who was new to the game, I would gladly give him some of these specimens.

"Novices could submit their names to R & M to be put in a "Novice Column." Other people, who are advanced, could send them their "common" specimens. The novices could remit to the donors sufficient postage to cover the cost of mailing.

"A few years ago, I acquired an affinity for minerals; but I had nowhere to start until I was given a few common pieces to build a foundation. Today I thank that person very much, for I have a collection—though comparitively small—that I am proud of."

If novice collectors (beginners) will send in their names and addresses, we will be glad to start this column, printing a few names in each issue.

Aristocratic Look

Editor R & M:

The new cover sure gives the good old reliable R & M an aristocratic look but you couldn't improve the contents. Keep up that fine style.

Irving W. Hurlbut
2602 East 32nd Rd.-R.R. 1
Davenport, Iowa

Aug. 8, 1953

Gee! He Lets Them Borrow His R & M!

Editor R & M:

May I take this opportunity of telling you how very much I enjoy your splendid magazine (and so do all the friends who borrow it) and also how handsome I consider the new covers.

J. P. Sanders
633 9th Street,
Douglas, Arizona

Aug. 10, 1953

Big County Now A City!

Editor R & M:

You will note that my address is Warwick. The entire county has now been made a city, and I believe it is the first county that has been made a city in the U. S.

Henry G. Mullins
Warwick, Va.

July 14, 1953

COLLECTING SANDS

By W. T. O'GARA
1937 Hurley Avenue, Fort Worth 4, Texas
Formerly Chief Paleontologist E.N.A.P., Punta Arenas, Chile

To the average mineral collector, collecting sands may not be particularly interesting or seem to have anything more than a passing importance mineralogically. But to the Petroleum Geologist sands are of primary importance because large accumulations of sand in lenses or in sandstone formations, serve as reservoirs for the accumulation of petroleum and natural gas in commercial quantities.

Today most of the larger Oil Companies maintain laboratories to study the sands and other lithological samples which are obtained when an oil well is drilled. Not only well samples, but samples from all kinds of surface outcrops are collected and studied also, and a great deal of valuable information is obtained which assists in the discovery of new oil fields.

Practically no attention was given to the material derived from the drilling of oil wells during the early history of the petroleum industry. The cuttings, which usually have the consistency of sands, were observed in a general sort of way but no coordinated records were kept of the different kinds of materials encountered by the bit.

Quite some time ago, in the State of Illinois, a Geologist named J. J. Udden, at the time employed by the state geological survey, became interested in the examination of samples obtained in digging and drilling water wells. Since most of the state is covered by glacial deposits, it was not always possible to follow geological formations from place to place with exactitude. He examined the samples taken, with a hand lense or with a low power microscope, and then recorded his findings on long strips of paper marked to a scale of one inch to ten feet vertically. He used symbols, or at times different colors, to differentiate various kinds of sediments. Thus a diagrammatic "well log", as it is called today, was constructed. By observing the material and its characteristics and recording its occurrence in well logs, Udden was able to make maps of the formations buried beneath the glacial cover even though he was not able to see more than small samples such as were obtainable from a well. Udden may be considered to be the father of subsurface geology because he was the first to use a method now universally accepted in the search for petroleum.

Today the cuttings from wells are considered to be of the utmost importance by the petroleum geologist and constitute the principal source of his information as to the subsurface stratigraphy, and conditions most favorable for the accumulation of oil. The cuttings are intensively studied under the binocular microscope and all of the information obtainable as to the nature of the rock, whether sedimentary, igneous, or metamorphic; is recorded on the scaled log. In many areas minute fossils called Foraminifera are found with the cuttings. Fortunately for the subsurface stratigrapher certain types of Foraminifera are characteristic of one formation and may not be found in others. Thus when this particular kind of microscopic shell is noted as appearing in the samples as they are examined, starting with the top of the well, the geologist knows that the top of a certain formation has been reached by the drill. This occurrence is recorded on his log against the depth at which that sample was taken. Many different fossils, and types of sediments such as limestone, sandstone, shale, marl, and their variations, will be recorded and utilized to make a vertical yardstick to measure rocks that cannot be seen at the surface. By matching up these well logs the underground extension of the strata can be proved and oil bearing structures can be located. Because of their porous nature, sands hold the oil and gas, while other rock formations will seldom do so. The

larger the grain size of the producing sand, the greater will be the quantity of oil produced. Thus it is that the sands are studied also in the laboratory to determine the porosity and the amount of cementation so that the effective pore space can be calculated.

When we speak of sand, we naturally think of Quartz sand, but this is erroneous, because sand is properly a lithological term, denoting fragments of rock of a certain size range, and not the material of which it is composed. Sand can be composed of many kinds of minerals and mixtures of minerals, and there are many interesting sands having a mineralogical interest to the collector. The Cerium sands of the beaches of the State of Bahia, Brazil are made up primarily of the minerals containing that rare element. There are beaches along the Atlantic coast of Florida which are rich enough in Rutile and other Titanium minerals to be mined profitably, and in other places Magnetite is the commonest mineral constituent. The beach sands of northern Argentina and of Uruguay have a fair percentage of Agate or Chalcedony, as well as Quartz. Garnet sands are common in areas where metamorphic rocks containing that group, are undergoing disintegration. The collecting possibilities for sands are unlimited and a very interesting collection can be assembled without difficulty.

The aquisition of material for study is not a great problem in most localities, since beaches, sand dunes, rivers and lakes, and sandstone formations, will provide a great variety of sands of diverse mineral constituents, and the field of collecting can be as varied as one wishes.

Preparation

The purpose of this article is to outline some of the methods which may be useful to the sand collector in housing and studying his collection. It goes without saying, that no very thorough study of sand samples can be made without the use of some optical aid such as a good hand lens, or better still the binocular microscope. An inexpensive and very useful pocket microscope has come recently on the market. It has a magnification of 20, 40, and 60 power, and can be focused with a special micro-focusing ring. This gadget can be obtained from the Edmund Salvage Co., Barrington, New Jersey, stock number is 30005-P, value $2.95 postpaid. It can be obtained elsewhere also I am sure, since it is a German post war product. The same concern has an inexpensive monocular scope, No. 70000-p for $12.50 which seems to be a good buy. Many other magnifiers are on the market that will be useful for examining sands.

When sand samples are brought home, they should first be washed to remove any dirt or foreign material not wanted. Sometimes it is necessary to give more extensive treatment to the samples in order to prepare them for study. It may be that one wishes to reduce a sandstone rock to the consistency of a loose sand so that the individual sand grains can be studied. If the sandstone is loosely consolidated, it can be disaggregated by hammering, but if the stone is tightly consolidated, a different method must be used.

A method now commonly used in most oil company laboratories to disaggregate consolidated sediments, is to boil broken fragments of the material first in a concentrated solution of Sodium Carbonate for about six to eight hours. At the end of this time it can be seen that a part of the stone will have been reduced to its finest grain size, and the fine material can be washed though a series of sieves of various meshes. The fraction which did not break up is then washed a few times in clean water and dried over a fire. When this sample is thoroughly dry it is immersed in a dish or bowl of gasoline and left to soak for at least a day. The gasoline penetrates the pores of the stone and exerts a pressure on the particles of the material, gently pushing them apart, and thus facilitating disintegration. This gasoline treatment may have to be repeated a few times, and if so it must be remembered that first the sample must be washed in water and dried over the fire again. It goes without saying that one must remember that gasoline is highly combustible, and that all caution must be observed in using it. That is why the

sample must be washed before heating it again. When sufficient sand has been dissociated it can be washed and sieved, and then dried for storage or exhibition.

An alternative method is to boil broken fragments of the rock in a concentrated solution of Glaubers Salt and allow the solution and the stone to become thoroughly dry. When the salt crystallizes it exerts pressure against the fragments internally and pushes the rock apart, just as does ice in the interstitial cracks in granite and other hard stones. After the material is sufficiently well comminuated it must be thoroughly washed to remove all of the salt, and then can be sieved and stored for future reference.

At times it may be found that the cementing material of the fragmental rock may be calcium carbonate, a fact which may be ascertained by testing with Hydrochloric Acid. If the cement is limey the fragments can be immersed in a weak solution of Hydrochloric Acid until sufficient sand has accumulated for one's needs. Wash the sand thoroughly to remove all of the acid.

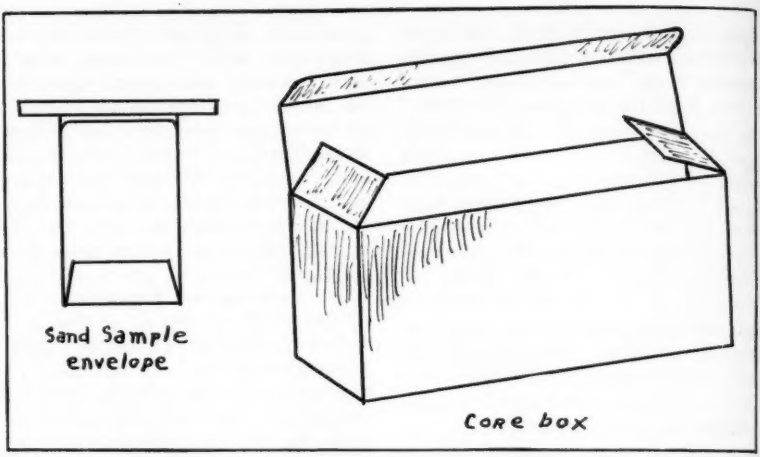
If, as frequently is the case, the sand sample obtained from sand rocks is iron stained and discolored by rust; then it may be well to immerse the sample in a solution of Oxalic Acid until the stain is removed. Remember that this acid is very poisonous and do not allow it to remain on your hands for long, or better still wear rubber gloves, and thoroughly wash your sand sample in clear water a number of times before drying it.

By definition, sand is any kind of fragmental rock of whatever mineral constituent, of a definite range of grain size. According to the Wentworth scale which is almost universally accepted, this scale ranges from very fine sand, 1/6 mm. to 1/8 mm., fine sand 1/8 to 1/4 mm., medium sand 1/4 to 1/2 mm., coarse sand 1/2 to 1 mm., and very coarse sand 1 to 2 mm., Thus it may be seen that a sand sample can have fragments of various sizes and shapes, and it will be convenient to separate the sample into at least three size fractions in order that it may be more easily examined. The separation can be made with inexpensive sieves obtainabie at any dime store. The coarser grains obscure the shape and mineral character of the smaller constituents which usually are the more interesting in a mineralogical sense. The finer or finest siftings often have an entirely different aspect than do the coarser in the sample, usually because the heavier minerals than Quartz will be in minor abundance and in more minute fragments.

Storage and Exhibition

The matter of exhibition and storage of a sand collection can be as simple or as complex as the collector wishes. The mode of exhibition naturally depends on the purpose for which the collection is made. The mass of oil well samples accumulated in a company laboratory are kept for reference, and comparison with new wells which will be drilled, so that comparisons of known formations, lithologies and possibly Foraminifera or other valuable subsurface data can be made.

Various oil companies have solved their storage problems in the following manners. A standard sized manila paper envelope has been devised, 3 inches by 5 inches, with a metal band across the top that can be folded over the opening twice and the ends crimped down. These are called Empire sand sample envelopes and fit into standard size cardboard cartons called core boxes which are 3 by 5 by 15 inches, and will hold a good number of sand envelopes depending on how full they are. The name of the well, and the depths of the samples contained in the core box are printed on the end of each box and thus it is easy to find a particular sample or string of samples when required. These supplies can be obtained from the Tulsa Paper Co., P.O. Box 30, Tulsa, Oklahoma. An older and more cumbersome method was to place each sample in a small glass vial with a screw cap top and gum a label with the well, and depth data to the vial. These vials were kept in cabinets of card board having 12 drawers to the cabinet, and were manufactured as office containers for stenographic supplies such as typing paper. This system has the merit that each sample can be examined through the sides

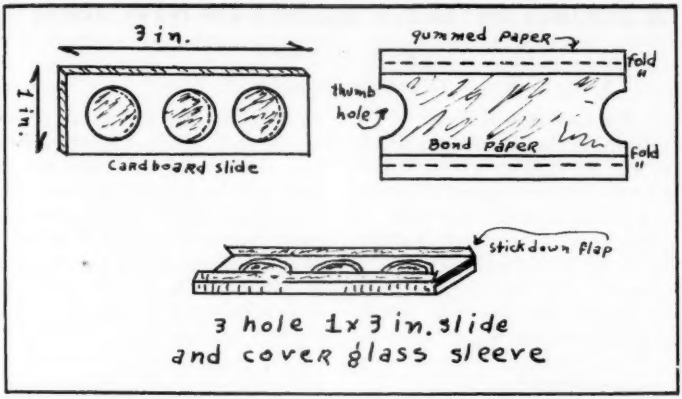


of the vial without the necessity of opening it, but has the dissadvantage of being much bulkier, when numerous units accumulate.

A method which the author has borrowed from the micropaleontologist, is adequate for all ordinary purposes of study and exhibition, yet has the advantage of occupying a small storage space. In order to study the microscopic Foraminiferal shells which are obtained from well samples, the micropaleontologist must first separate the shells from the sand by picking them out with fine pointed artists brushes, and place them in specially made cardboard storage slides having one or more cells into which the shells can be placed in great numbers for further reference.

Similar slides of cardboard for sand can be made inexpensively by purchasing a paper punch of steel with a circular opening of 10 or 14 mm. in diameter. The type of punch indicated, is struck with a hammer in order to cut holes in the thick cardboard slides. Cardboard stock, approximately $\frac{1}{8}$ inch thick, is cut to measure 1 by 3 inches and then from 1 to 3 holes punched though it. Another much thinner cardboard slide of the same dimensions, but without the holes, and having one surface blackened with flat black paint, such as used by photographers for darkroom use, is glued to the punched slide so that the black shows through the holes. A cover for this slide with cells, must be made, and it is convenient to use the standard 1 by 3 inch microscope slide of the Biologist for this purpose. To fabricate the cover, first take a gummed manila paper such as is used for taping corrugated cartons, securing tape that is 3 inches in width, and cut it across the width into segments that are wide enough to cover the back of the slide with the cells, and extend around and over the glass microscope slide, which is to act as the top cover. In order that the gummed manila tape will not adhere to the cardboard slide, a 1 by 3 inch strip of heavy bond paper or thin Bristol board is to be stuck on the gummed side of the manila tape, allowing equal parts to extend on either side. Fold these flaps around the slide with the cells and over the top of the glass slide on top, creasing the manila tape as it is folded, and by moistening the gummed edges of the flaps, attach them to the glass. This laborious process forms a sleeve which can be slipped off the body of the slide with the cells when one wishes to insert or remove anything from them. The appearance of this slide will depend upon the neatness and skill of the craftsman, and many variations of this type of slide can be constructed, making them thinner or thicker, for storage of various fragmentals. (See illustration)

If one has not the patience or inclination to construct these slides they can be



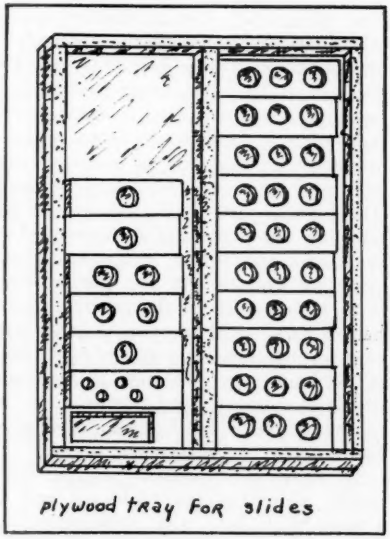
purchased from Curtin & Co., of Houston, Texas, who supply scientific instruments. They can supply you with a number of different types of slides. Ask for a selection of samples which they will send you. These slides have the advantage that they can be stored very securely in the boxes in which the glass 1 by 3 inch clinical slides are packed.

Another method is to coat a 1 by 3 inch glass slide with Canada Balsam, or with ordinary Duco cement, and strew the sand across the wet surface. The Duco cement has the advantage since it dries very quickly. This type of slide can be examined in either reflected or refracted light, which sometimes is advantageous. Wooden slide boxes can be bought for these glass slides.

A convenient means of having a sand collection available for immediate study or comparison, is to have a cabinet of pull-out drawers constructed of thin three-ply veneer tablets with small, raised sidewalls (see illustration) which will accommodate numerous slides lying flat. Such a cabinet can be made in the workshop by the handy man, and if made in standard sizes, will present a very neat appearance as new units are added. If you would rather use glass shell vials instead of slides, the same type of cabinet can be made with higher sides to the drawers so as to accommodate at least two, or perhaps three rows of vials to the drawer. An excellent vial has been manufactured lately having soft plastic push-on caps, and comes in various shapes and sizes. Consult with your druggist or the nearest druggist supply distributor about it; bought in quantity they are inexpensive. Small square pill boxes also provide storage space for sand samples.

With ingenuity one can devise a very interesting collection of sands, and begin to appreciate many facts about what often appears to be a drab and commonplace material.

(Continued on Page 492)



A DOUBLE-INTEREST LOCALE IN NEW JERSEY

By W. H. HAYES

35 — 22nd Street, Irvington 11, N. J.

1. The Geological Interest

Before anything else is written it should be stated that the subject of this article is a rock formation named Cohansey quartzite. Its occurrence in New Jersey is quite unique in the annals of geology, for, as far as the writer has been able to ascertain, there is no other deposit of its kind known than the one here delineated. Its double-interest lies in the concurrence of its geological-mineralogical and archaeological features.

Cohansey deposits, which include both sand and quartzite, belong to the Kirkwood phase of the Miocene geological period, and are found in several southern New Jersey counties, namely, Salem, Cumberland, Burlington and Gloucester, and are placed by geologists in the later portion of Miocene time. Outcrops of the quartzite are few, and the most notable one for the purpose of this article is that on the farm of Robert Ewing, in Greenwich, Cumberland Co., which lies about a quarter-mile west of the Cohansey river. The Cohansey deposits were first investigated, studied and named near Kirkwood, Camden county, N. J. The quartzite outcrop on the Ewing farm was about 3/10 of a mile long and 250 feet wide. Its examination without excavation has been spoiled through the cultivation of farm produce and by other vegetation so that now only shallow depressions here and there may be seen. The highest parts of the site are at best only low elevations and are composed of sand and gravel that is apparently ancient sea bottom. At the present time there is not much of the quartzite to be had at its original location; a large part of it having been removed in large pieces to be built into dwellings as fronting, fireplace chimneys and beside steps as coping. There is another inferior deposit near Shiloh, in Cumberland Co.

In color the quartzite ranges from nearly white through pink and red to almost black, and any combination of these colors may be found in one chunk of the rock. Under the magnifying glass the clear sand grains with rounded surfaces can be plainly outlined within the cementing silica, particularly where the induration is incomplete. Some portions of the rock show that the rounded grains of sand of which it is composed have been cemented just enough to hold them together, though most of the rock is thoroughly cemented, and is a true quartzite which fractures through its grains instead of between them as in sandstone. It also has the characteristic of conchoidal fracture as well as considerable brittleness. Without doubt the quartzite was formed by silica in solution having permeated the sand while it was stationary, and after there had been deposited in it numerous shells of bivalves such as Ostrea, Venus and Eucrasetella. Throughout the quartzite the forms of the fossil remains are preserved in the variety of quartz known as chalcedony. These may be white, reddish or some shade of brown. Fossil forms are found in quartzite much less often than in many other rocks.

The geological-mineralogical interest lies, therefore, in its individuality as to form and location within our state, as well as in the association of the mollusc fossils within the quartzite. It is one of the many outstanding mineralogical occurrences that New Jersey is noted for.

2. The Archaeological Interest

While Cohansey quartzite is known to us today as an an unusual and interesting mineralogical and geological formation, it was also known to the first men who occupied the territory of southern New Jersey, viz, the aborigines, Indians, Lenape by family name and Unalachtigo by local name.

As is usual with the selection of utilitarian stone by our predecessors for the necessary implements and weapons for hunting and warfare, the native red men, who had keen powers of observation and

perception, discovered the outcrop of Cohansey quartzite in its native state, and probably without much hesitation or experimentation realized its virtues. Some one of them probably first observed the stone while crossing from the Cohansey river to a village or camp not far away without any foreknowledge of its usefulness gleaned from other localities or habitations where it was non-existent. However, it was worked out of its resting place by the use of stone mauls or hammers and carried away either in dugouts or overland by packing. Today the pits or depressions resulting from digging out the rock are about obliterated due to farming and gradual levelling of the ground. Its distribution in the way of useful implements seems to be limited to the four counties of Salem, Burlington, Cumberland and Gloucester, and the remains of the Indians' flaking and chipping of this quartzite are confined to the territory within a radius of 30 miles from a central point at Pittsgrove. All of the habitation sites within that scope have refuse from the making of projectile points, scrapers as well as spalls, so-called blanks and partially made implements, and these may be found as well as those completely finished. It has been reported but not confirmed that a few scattered fragments of Cohansey quartzite have been found as far away from its source as Flatbrookville, in Sussex Co., N. J.

When it comes to making a comparison of the utility of Cohansey quartzite with the other kinds of stone found to have been used by the Unalachtigo, we find that when it was possible to complete the shaping of artifacts without breaking them, that they compare well, for the points and edges are as sharp and serviceable as in other kinds of stone. However, the refractory nature of this quartzite and its lack of uniformity of texture which is due to the presence of streaks of chalcedony, as well as here and there incomplete cementing of the grains of which it is composed, prevented many times the production of nicely finished implements. While this quartzite is truly such in the main it did not always fracture through its grains when the Indians proceeded to flake and chip it. It sometimes separated between the grains where they are not completely cemented or the cementing silica is not as compact as the quartz itself. Where the induration is most complete the quartzite, under chipping, will produce the most perfect artifacts, and this in spite of the variation of the texture between the quartzite and its enclosed chalcedony. The contrary condition applies to the smooth fracture to be found in the chert, jasper and white quartz specimens occurring on the same sites with the Cohansey.

No great variety of types of arrow points has been noted to date, and most of them thus far have been either straight —or nearly straight—stemmed, or triangular. More triangular than stemmed points seems to be the rule. There are a few bifurcated—base points in private collections, three only known so far. Spear points of about 3½ inches long are known to the number of about seventeen. A point made entirely of the chalcedony that replaced a mollusc shell is also known. Cohansey artifacts are much rarer than those made of jasper, chert, shale and white quartz, and really fine artifacts are quite scarce.

Of scrapers there are large numbers, but unless close attention is paid to them when found they will not be recognized for they are rather crude in shape and workmanship and sometimes have only small scraping edges at one end or corner or side. However, the proof of their having been used appears as a smoothed edge produced by actual scraping; on what other material we can only conjecture, but one possible proof lies in the markings left on the fragments of steatite vessels that have been scraped and smoothed on the inside which are occasionally found coincident with the quartzite.

At the site on the Ewing farm the writer recently procured a hammer that has been used in the working of the local stone and it is composed of brown jasper. Other kinds of weapons or tools made of Cohansey quartzite than those

noted above have not been seen or reported up to now.

New Jersey may well be proud of its position in the field of archeaology for the state contains, or rather has contained in the past, multitudinous relics of its prehistory, and when a phase such as the one described herewith is known it should be recorded permanently for the benefit of the science as a whole.

UMOHOITE, A NEW MINERAL FROM UTAH

A new species of uranium mineral has been identified in the Columbia University mineralogical laboratory. Named "umohoite" by its two Columbia discoverers, the newly-found mineral consists of 48% uranium, combined with molybdenum and water. Natural pitchblende, most common source of uranium, contains an average of from 50 to 65% of the radioactive element.

Details of the discovery were in the hands of the Atomic Energy Commission's New York office yesterday, following notification by Professor Paul F. Kerr, professor of Mineralogy at Columbia. Mineral research undertaken in cooperation with the Division of Raw Materials of the AEC led to discovery of "umohoite."

Professor Kerr and Gerald P. Brophy, a graduate student assistant, brought back samples of the black, flaky mineral from the Freedom Two uranium mine at Marysvale, Utah. Some 25 pounds of ore, taken from a number of veins, was collected last summer and is still being analyzed with the Mineralogy department's X-ray spectrometer. Discovery of "umohoite" came half-way through this analysis; a second half of the ore samples is yet to be investigated.

"It is now clear," Professor Kerr said recently, "that the mineral is a new species not previously described. It contains molybdenum and water in addition to uranium, being a hydrous uranium molybdate. The name 'umohoite' is given to the mineral by combining the chemical symbols U, Mo, H, and O with the mineral suffix 'ite.' This follows a recent trend toward naming minerals on the basis of chemical composition where feasible, rather than after prominent scientists."

"Umohoite contains about 48% uranium," the professor continued, "but it is not yet known how widely the mineral is distributed, occurrences thus far known being limited to one mine. Marysvale ore, however, frequently contains an unusual amount of molybdenum which could be attributed to umohoite. It is also likely that other occurrences of umohoite may be found in the West."

Tracing the origin of the newly-identified mineral, Professor Kerr explained that it is associated with pitchblende of Tertiary age—estimated by geochemists to be about 25 million years old. Deeply-eroded throats of old volcanos are found in the Marysvale district, with occasional hot springs not far away. Uranium is believed to have been deposited by solutions arising from some of these dying volcanos.

While small amounts of the mineral are fairly widespread in distribution, according to Professor Kerr, samples of pure material are only separated with great difficulty. In fact, for testing purposes small crystals of "umohoite" are picked out under a microscope. The crystals appear to be irregular flat plates, but are shown by x-ray studies to be symmetrical hexagons in shape.

Professor Paul Kerr, co-discoverer of "umohoite," already has the discovery of one uranium mineral to his credit. Called "sengierite," the hydrous copper-uranium-vanadium mineral was found in Katanga, Belgian Congo and announced October 3, 1948.

"SNOWFLAKES" IN STONE
"CHRYSANTHEMUMS" IN CALCITE

By FRANK H. WASKEY

Dillingham, Alaska

The most westerly point on the North American Continent is Cape Prince of Wales, Alaska. On a clear day one needs to ascend this striking promontory but a few hundred feet to see the Diomede Islands, straddling the International Date Line, and, a little to the right of the line of view, East Cape, Siberia.

To the northeast of Cape Prince of Wales, along America's border line, there are leagues of shallow lagoons, separated from the Arctic Ocean by a string of elongated low lying sand islands.

Along the seaward strand of some of these islands there occur, sparingly, some unusual aggregates of calcite crystals.

Unusual in that they very evidently are formed in a matrix of partially indurated sand under the Arctic Ocean. And unusual in their diverse habits of growth. Stars, Crosses, Cockscombs, Flakes, and multi-petaled Flowers. In color from gray and cream through yellows and browns to black. Often twinned. Sometimes several will be bound together in their matrix to form an ensemble, bird or animal like, in outline and appendages.

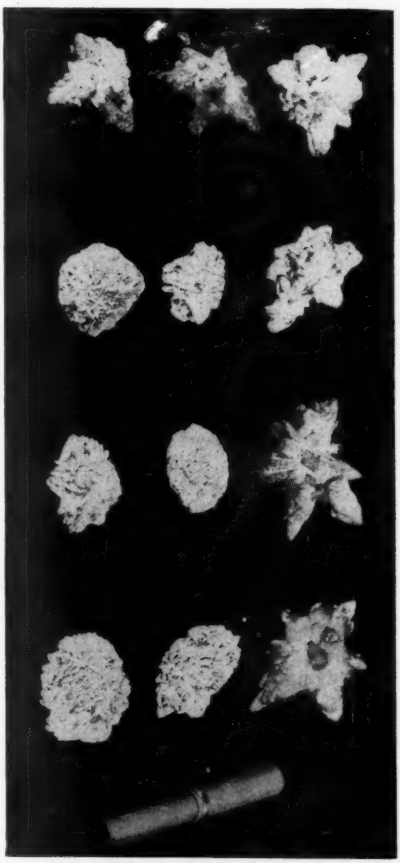
Strictly speaking the name "Snowflakes in Stone" does not apply. Everyone knows that Snowflakes are always hexagonal in growth, while all of these Arctic calcites are rhombohedral.

But a not unusual form is often a perfect representation of a Pompon Chrysanthemum.

Since the writer first saw these unusual concretions in June 1951, effort has been made not only to collect as many of the finer specimens as possible, but to learn by letter and personal investigation if they occur at any other point or points on the Arctic Ocean. It is believed that these investigations have established that they do not occur, accessibly, at other points.

The summer of 1952 has seen many of the islands mentioned well beach combed for these "Koo-loot or Kool-koot" as the local Eskimo call them.

Very few really fine specimens have been found. After severe westerly storms some are generally washed ashore. But if these are not speedily won, abrasion by wind and wave soon wears the crystal terminations, and in a measure lessens their attractiveness.



Sand calcites from Sarichef Island, Arctic Coast of Alaska.

During the winter, westerly winds, exerting great pressure on the roughly surfaced ice floes, often force solidly packed masses of ice up the entire width of the beaches with resulting damage to any of the crystal aggregates plowed up by the landward moving ice.

The writer considers his stumbling on to these "KOOL-KOOT" to have been one of the most interesting experiences in his more than fifty-five years of prospecting for minerals and collecting artifacts.

And he believes also that if enough of the crystal aggregates can be secured to make it worth while to give them the proper publicity, that the finer specimens will appeal to every advanced collector of either minerals or Alaskana.

And perhaps the smaller and less attractive concretions, (if it may be practical to price them very reasonably), may be sought after by beginners in the hobbies.

The Eskimos at Wales and Shishmaref believe that these "Kool-koot" come from the carcases of "very old" polar bears that are resting or have rested on the ocean bottom.

White man like this was dismissed, as at best, an interesting tradition. However it has been observed that some of the larger aggregates have a nucleus of what appears to be organic matter. In some instances these nuclei resemble a coprolite.

"Mebbe so, Eskimo sometime plenty savvy."

AN EXCELLENT QUARTZ CRYSTAL LOCATION

By T. ORCHARD LISLE

It is possible that the Taber Estate in Middleville, N. Y. (about seven miles north of Little Falls), is the best productive location for Herkimer "diamonds" (double terminated quartz crystals) in the entire dolomitic limestone area, provided the collector is willing to work real hard with sledgehammer, chisel, crowbar and rake. The estate is posted; but Mr. Adrian Petrie and son, who own the property, are there on most days and are willing for collectors to dig to their heart's content provided they pay a reasonable daily fee. Their home is in Mohawk, N. J.

They take a friendly interest in crystal collectors, and think nothing of giving them a helping hand or point-out a potential area for working. When I was there over a recent week-end they even very courteously loaned me heavier tools than those I had brought with me in the car. Although the Petries collect and sell crystals, they have a policy of handing any stones they may see on the ground to the nearest collector, no matter how fine such specimens may be.

The house on the estate is for sale, but the Petries are considering furnishing the rooms, and making an inclusive charge for lodging and collecting. What a nice week's vacation that would make for an ardent rockhound! Let's hope that they will put through this plan. As an alternative, one of the leading mineral clubs could not do better than purchase the estate for the use of its members, making a fair charge for members of other clubs.

My latest visit was two days in early August of this year, together with Winston Gold of the N. Y. Mineralogical Club. Gold dug for "diamonds" in the soil about 20 feet away from the outcrop of rock that I worked on. He found mostly the large size crystals which nearly always have internal fractures and some nice clear ones. I broke up, with Mr. Petrie's help, many tons of dolomitic limestone, and obtained about 30 crystals (clear) in matrix, and about a hundred loose crystals of top notch quality. Most of these had "popped" from the cavities when hammering the rock.

I have come to the conclusion that the large and fractured crystals are an earlier formation than the crystals still in the matrix, which are mostly quite clear. This would account for the fact that the big crystals are in the weathered soil rather than in the rock. They evidently underwent a second heating process when the crystals now in matrix were formed. Perhaps readers have other theories!

World News on Mineral Occurrences

Items on new finds are desired. Please send them in.

Abbreviations: xl—crystal xled—crystallized xline—crystalline

ALABAMA—Gray, pisolitic bauxite occurs near Stewart, Cherokee Co., Ala.

ARIZONA—In a letter dated Aug. 1, 1953, from Walter Busch, 43-32 Elbertson St., Elmhurst 73, N. Y., appears the following item:

"I have recently returned from a Western trip. In Arizona I had located beyond doubt the Lost Dutchman Mine in the Superstition Mts., in Pinal County, about 20 miles east of Phoenix. Contrary to all belief, this old and famous mine is located a good many miles from Weavers Needle where the search has been principally centered. This is the mine where Jacob Wolz mined his rich ore. The ore will average about $500 per ton in gold. I located also a silver claim where the ore will average over a thousand ounces and more silver to the ton. I have made also a rich find of zirconium ore. I would consider giving anyone who has the means to develop anyone or all these prospects, a fair and proportionate interest in any or all these claims."

ARKANSAS—America's only diamond mines, near Murfreesboro, Pike Co., Ark., are now open to the public as a tourist attraction. The mines have been opened to tourists for several years for diamond-hunting excursions on a "finder-keepers" basis.

One of our subscribers sent in an item which stated that Howard Pruitt, of Waxahachie, Texas, on his visit to the mines on June 24, 1953, found a 2-carat diamond valued in the rough at $500.

Mr. and Mrs. Howard Millar, owners of the mines, have announced that 16 diamonds have been found this year up to June 24, and that Pruitt's find was the largest. Mr. Pruitt was planning to have his diamond cut and set in a ring.

CALIFORNIA—Wm. C. Chandler, 1465 Pacific Ave., Crescent City, Calif., has sent in a number of nice pebbles collected on the beach in his city which is located on the Pacific Ocean. Among the pebbles were green epidote, lustrous brown limonite and the following quartz specimens — bluish-gray agate, brown chalcedony, brown jasper, milky quartz, and dark brown petrified wood. All specimens would take a nice polish.

The world famous Crestmore limestone quarry, near Riverside, Riverside Co., Calif., has yielded two more rare minerals. The new minerals are scawtite and afwillite and were recently found and identified by Dr. Joseph Murdoch, University of California at Los Angeles, Calif.

Scawtite is a colorless calcium silicate and carbonate which was first found at Scawt Hill, County Antrim, Ireland; second find was made in the Little Belt Mts., Montana; and the third find at Crestmore, Calif.

Afwillite is a white or colorless hydrous basic calcium silicate, which was first found in Kimberly, South Africa; second find made at Scawt Hill in Ireland, and the third find at Crestmore, Calif.

The number of minerals known to exist in the Crestmore quarries total more than 130 varieties.

Have you noticed the picture on the cover? It is of some very fine gypsum rosettes found in the city of San Diego, San Diego Co., Calif. The picture was contributed by Plummer's Minerals, 4720 Point Loma Ave., San Diego 7, Calif. In his letter, dated Aug. 9, 1953, Mr. Plummer writes:

"The gypsum rosettes occur in a layer of adobe in the North East section of San Diego. They have been known for several

years. The gray color is due to adobe inclusions. I am sending you a fair specimen via parcel post and hope you like it."

The specimen received is a very fine one — 5x6x3½, of a gray color, and weighing exactly 3 pounds.

COLORADO — Stewart Pickford, Steamboat Springs, Colo., informs us that the following minerals are found in or near his town in Routt County. Aragonite, in conical fibrous masses, and fluorescent calcite (both from the Rodeo Grounds in Steamboat Springs); epidote (at the Hot Springs in Steamboat Springs); pyrite, good pyramids (2.1 miles west of Steamboat Springs); psilomelane, good botryoidal lumps (Rabbitt Ears Pass, Steamboat Springs); and black xls of tourmaline (Walton Creek, Rabbitt Ears Pass, Highway 40, Steamboat Springs).

CONNECTICUT—Wilbur J. Elwell, 2 Duck St., Danbury, Conn., has sent in an item clipped from the DANBURY NEWS (June 9, 1953) which is captioned "Danburite is Precious Gem." Quoting from the item:

"Danbury is world famous for its manufacture of hats. But it is probably least known for (as far as today's generation is concerned) as the place which gave its name to a rare mineral species—danburite, a semi-precious gem.

"Danburite was discovered in 1839 in Danbury, whence the name, and it occurred here embedded in dolomite.

"Danburite was found by Dr. Charles Shepard at what is now the intersection of North Street, Pandanaram Road, and Hayestown Avenue. It is believed that other formations were located on Cleveland Street, Sugar Hollow Road, Edgewood Street near Lake Avenue, and at the Stockbridge limestone area in Brookfield.

"The mineral is also known in Mogok, Burma, Madagascar and Switzerland and splendid quantities have been located in Japan.

"Specimens of danburite here are virtually extinct."

DELAWARE — Corundum has been found near Chandlers Hollow, New Castle Co., Del.

FLORIDA—Some few months ago we received an assortment of 3 nice ferruginous quartz pebbles (brown in color) that were sent in by W. T. P. O'Gara, 1937 Hurley Ave., Fort Worth 4, Texas. The pebbles are from Pensacola, Escambia Co., Fla. A note with the pebbles reads:

"These pebbles come from a historic site—first Spanish fortification in America Continental (Fortress San Carlos de las Barrancas), U. S. Naval Air Station, south of Pensacola.

GEORGIA—The following was sent in by Stuart S. Merwin, 1010 12th St., Golden, Colo.

"While in Georgia I ran across some clear almandite garnets and I am sending you one for your collection. Unfortunately the ones I have left are mostly cracked but they are still definitely worthwhile. John Sinkankas has cut a few of these and thinks them fine. For your World News on Mineral Occurrences you may say they come from 6 miles S. E. of Dallas (Paulding Co.), Georgia."

The crystal received is dark red (almost black) with rounded edges but a nice ¾ inch specimen.

IDAHO — Nice xled specimens of white, translucent calcite have been found in the Bunker Hill lead-silver mine at Wardner, Shoshone Co., Idaho.

ILLINOIS—Very nice dark purple xled fluorite has been found at the Austin fluorite mine, Cave-in-Rock, Hardin Co., Ill.

INDIANA — Diamonds have been found in some of the gravels of glacial drifts in Brown and Morgan counties, Indiana.

IOWA — Brown limonite occurs on Skunk River, Henry Co., Iowa.

KANSAS—Gypsum has been mined at King, in Barber Co., Kans.

KENTUCKY—Asphalt, as black, bituminous masses occurs in sandstone that has been quarried 2 miles southwest of Garfield, Breckinridge Co., Ky.

LOUISIANA — We are indebted to Mark H. Robinson, 18 East 41st St., New York 17, N. Y., for a copy of THE NEW YORKER (June 13, 1953). This fine magazine had a most interesting article on Avery Island, a salt dome in southern Louisiana. The article is titled "Our Footloose Correspondents — a dash of Tabasco," and begins on page 31.

MAINE—A letter dated July 22, 1953, comes from Gunnar Bjareby, 147 Worthington St., Boston 15, Mass. The following paragraph is from the letter:

"In 1936, on my first mineral collecting venture up in Maine, I visited many localities. Among the localities visited was Ohtonen's feldspar quarry in Greenwood (Oxford Co.) on Noyes Mountain, on the other side from the Harvard Quarry. Besides the ordinary pegmatite species I noticed a few others with which I then was unfamiliar. These were set aside until a few years ago when I noticed gahnite xls on a pyrite specimen. Several months ago I again examined those specimens and found colorless xls of bertrandite associated with fluorapatite xls of a pale blue color. The bertrandite xls are small and evidently rare at this locality."

"All who know the famous Bennett Mine in Buckfield (Oxford Co.), Maine, will be pleased to hear that Mrs. Bennett has started to open the mine again in a small way—not for feldspar this time but for specimens. The work is on the floor of the mine which has so many pockets that the Spar miners refused to go into it.

"This mine has produced a great number of minerals—many of them rare—and was used by Dr. K. K. Landes for a large part of his study for his Ph.D. degree at Harvard." This item, dated Aug. 7, 1953, sent in by Charles F. Marble, Buckfield, Me.

MARYLAND—Beautiful twinned xls of nailhead calcite have been found in clay fissures in limestone at Clear Spring, Washington Co., Md.

MASSACHUSETTS — Gem quality aquamarine has been found in pegmatite at Royalston, Worcester Co., Mass.

MICHIGAN—Pinkish masses of stilbite in dark reddish-brown basalt, have been found in Grandville, Kent Co., Mich., by Don Knowles, 3906 Canal, Grandville, Mich.

"I found it on the small hill on Canal St., south of Grandville. It came off a bigger piece that weighed 15 lbs." — on card dated May 20, 1953, from Mr. Knowles.

MINNESOTA—Placer gold occurs in small amounts in drift at Spring Valley, Fillmore Co., Minn.

MISSISSIPPI—Kaolin occurs at Fulton, Itawamba Co., Miss.

MISSOURI—Brilliant, iridescent xls of marcasite occur in the lead-zinc mines at Carterville, Jasper Co., Mo.

MONTANA — The largest chrome mine in the country is the Mouat Chrome Mine near Nye, Stillwater Co., Mont.

NEBRASKA—The following item is taken from the Nebraska Rock Hounds REAR TRUNK (page 4, June 1953) published by the Nebraska Mineral and Gem Club (Earl and Ruth Grantham, Publishers, 7915 No. 28th Ave., Omaha 12, Nebraska).

"The Henry's, Hufford's, Fowler's and Carol Chapman made a rendevous with the Fulton's at their monument shop in Wymore (Gage Co., Nebr.). We spent some time in looking at their collection and then with the Fulton's and Mr. Blaker, visited the Gage County highway quarry southeast of town. It is high in the hills above the Blue River Valley and only the upper strata of the Permian formations are exposed. The top limestone

layer produced some poor to fair quartz crystals in vugs. The layer below, probably Grant Shale, produced some calcite geodes, nicely crystal lined with milky to yellowish calcite crystals. Their outstanding value is in their phosphorescence under the "purple X bulb."

NEVADA — Massive native arsenic with traces of bismuth occurs near Rochester, Humboldt Co., Nev.

NEW HAMPSHIRE—Gunnar Bjareby, 147 Worthington St., Boston 15, Mass., has sent in the following interesting item, dated July 23, 1953:

"While on a recent field trip with the Boston Mineral Club to the Smith (?) feldspar quarry in Raymond (Rockingham Co.), N. H., I found a vug with at least two unusual minerals. The xls were coated with rust. Some were tabular and proved to be bertrandite. The other xls were prismatic and slightly etched, colorless or whitish. They resemble somewhat the new species palermoite. Besides the common pegmatite minerals others noted were pyrite, arsenopyrite, chalcopyrite, possibly pyrrhotite, columbite, goethite, uraninite, gummite, fluorite, siderite, manganapatite, triphylite, autunite, spodumene and alterations thereof, almandite, spessartite and uranophane."

Another item on the State has been received. It is dated Aug. 2, 1953, and comes from Julian Wetherbee, 22 Wheelock St., Keene, N. H. The item refers to the noted fluorite mines at Westmoreland, Cheshire Co., N. H.

"We have been informed that the Westmoreland fluorite mines may be reopened in the near future.

"Mr. Donald A. Paine, of Westmoreland, now owns the old Will Wise property as well as the Stoddard mines on the opposite side of the valley. Recently Mr. Paine has done a little exploratory excavating at the Will Wise property and the Stoddard is under lease to New York people.

"Any one wishing to visit these properties should ask permission."

NEW JERSEY—An item on the abandoned New Street trap rock (basalt) quarry in Paterson, Passaic Co., N. J., has been received from John Dreisbach, 144 Belle Ave., Maywood, N. J. The item is dated July 21, 1953, and reads:

"During the summer months I have made a number of trips to the lower New Street quarry in Paterson, N. J. On these trips I have exposed about five amethyst cavities and have chiseled out some excellent specimens of amethyst crystals. I am pleased to report that good specimens of amethyst can once again be found at this quarry."

W. H. Hayes, 35-22nd St., Irvington 11, N. J., has sent in a very nice specimen of reddish Cohansey quartzite which comes from the farm of Robert Ewing, Greenwich, Cumberland Co., N. J.

In the April, 1953, Esso Oilways (Editorial Office, 15 W. 51st St., New York 19, N. Y.), appeared a 7-page article illustrated with 14 very fine photos, on the historic Ringwood magnetite mine at Ringwood, Passaic Co., N. J.

The article is most interesting as it describes the historic background of this 213-year-old mine which is still in operation.

NEW MEXICO — Pale bluish-gray celestite as radiating prismatic xls about an inch long, occur in concretions in the Rio Puerco Valley, west of Albuquerque, Bernalillo Co., New Mexico.

NEW YORK—In the construction of the Delaware Aqueduct, started in 1937, the New York City Board of Water Supply had sunk 31 shafts which varied from 310 to 1550 feet in depth. One of these shafts, #20, was located on Orchard Hill near Elmsford, Westchester Co., N. Y. Though work has ceased on the shafts for a number of years, some of the abandoned dumps still produce good minerals, as typified by the following notes, dated July 7, 1953, which were sent in by Miss Evelyn Waite, 242 Scarsdale Road, Crestwood (Tuckahoe), N. Y.

"I went up to Orchard Hill with Mrs. G. B. Wiebe of Mamaroneck and again with David Brison from Bronxville, a young high school boy who is very interested in minerals. We found the old dumps had been dug over quite a bit and it was rather exciting collecting up near the north end, near the road (Rt. 100A). We found molybdenite, actinolite, diopside, dumortierite in a radiating cluster, also quantities of clusters of pale chartreuse xls which look like altered tremolite—up to 2 or 3 inches in length—2 pieces as large as a fist of what looks like crystalline amethyst. We found also quite a bit of the rosy, lavender-pink material which as yet has not been identified; Gwen Pendray took some of it up to college but as yet they haven't decided on what it is. This material was found in close proximity to the bladed diopside that contains molybdenite. There is not much left of the latter, but you can't tell what will be turned up next. And in addition, we found quantities of nice calcite xls with pyrite, freshly uncovered so unaltered. It is still an interesting locality."

One of the neighbors of the Editor of R & M is Elizabeth Ireland, a young lady only 12 years old. During the early part of August she went on a little vacation, with her Aunt Sally also of Peekskill, N. Y., to western New York where she visited Lake Ontario, Niagara Falls, Canada, etc.

From a private beach on Lake Ontario, near Somerset, in Niagara Co., N. Y., Elizabeth collected on Aug. 9, a number of pebbles—all of good quality, which included reddish chalcedony, milky quartz, red granite, gray fossiliferous limestone, and an unusually nice reddish conglomerate. The chalcedony was small, but the others were up to 3 inches in size.

Elizabeth is not a mineral collector but she has a good eye for nice minerals. She lives at 1100 Elm St., Peekskill, N. Y.

NORTH CAROLINA—Amethyst occurs in Warren Co., N. C., near Inez, 10 miles south of Warrenton.

NORTH DAKOTA — A nice black mass of petrified wood, from Coleharbor, McLean Co., N. D., has been received from S. T. Parke, Sterling, N. D.

OHIO—Our good friend, Cal O. Gettings, 2001 Starr Ave., Toledo 5, Ohio, sends in another item. It is dated July 5, 1953, and reads:

"Yesterday we visited two new quarries, at least two which have not been reported in R & M. These were Bellevue and West Millgrove, Ohio. The calcite in Bellevue (Huron Co.) is of at least five different terminations and the color of some resembles the finest wine topaz. The celestite of West Millgrove (Wood Co.) is a deeper blue than that of Clay Center, mostly spear point.

"For several years the celestite at Clay Center (Ottawa Co., Ohio) has been not only scarce but very fragile and few terminations are to be found. For this reason I believe collectors might be interested in another source of celesite."

OKLAHOMA—Native copper occurs in shale near Byars, McClain Co., Okla.

OREGON—Nice specimens of brownish chalcedony have been found at Central Point, Jackson Co., Ore.

PENNSYLVANIA—Robert L. Cox, 228 Elk Creek Ave., Girard, Penn., writes of an interesting trip made for quartz xls. His letter, dated June 17, 1953, reads:

"This past fall, winter and spring I have been attending the Pennsylvania State College. While at college I made two mineral collecting trips, the first one to West Virginia.

"The second one was for doubly terminated quartz xls. The locality for these xls is Lemont (not Lamont), Centre Co., Pa., which lies halfway up the west side of Mt. Nittany. To get there take route 45 out of State College, Pa., toward Mt. Nittany until you find a road turning off

to the right and marked with a sign post pointing to Lemont, take this road to Lemont and locate the railroad station. Take the road leading straight up the mountain to the left of the station. Keep going as far up the mountain as the roads go (about 4 blocks). Here you will find a horizontal road which cuts the bank a couple of feet. Park here, in the bank some xls can be found. The best place is in the cornfield which lies directly back of the railroad station and which is to the right and up from where your car is parked.

I collected just after plowing and before seeding and had very good collecting.

"The xls are very similar to Herkimer Co. (N. Y.), xls but occur loose and not in matrix. They are doubly terminated and show the same complicated development of xl faces. A few however are simple prisms capped by regular six-sided pyramids. In size they run from tiny to about two inches with the average being about ½ inch in length. In general they are not as brilliantly clear as Herkimers, but occasionally one is. They tend also to be in groups of two or three fastened together. Often these groups are unusual and attractive. In two hours I collected a small bag full. I am still cleaning and sorting them. I am sending you samples of these as well as of West Va. gypsum and North Carolina corundum nodules.

"My latest collecting was just this week. I stopped again at the Bridgeport, Pa., dumps and got some quartz xl groups. Next I visited the Big Hill dump at the famous Cornwall, Pa., mine. Here I collected pyrite, magnetite, hematite and serpentine. My collecting was hampered by a lack of knowledge of the rare iron minerals which I might have found. I am very satisfied with what I got."

RHODE ISLAND—Galena occurs at Tower Hill, in Kingston, Washington Co., R. I.

SOUTH CAROLINA—A nice specimen of drusy pyrite on dark gray massive smoky quartz has been donated by Mrs. Hattie Ofshanney, 43A Geo. Legare, Charleston, S. C. The specimen was found at the abandoned Haile gold mine in Lancaster Co., near Kershaw, S. C.

SOUTH DAKOTA—John P. Connor, Box 522, Armour, S. D., has sent in an interesting specimen collected in Tepee Canyon, Custer Co. (14 miles west of Custer), S. D.

The specimen is a colorless xline calcite whose surface is crudely xled and stained red.

TENNESSEE—A new zinc mine has been opened up in eastern Tennessee which we hope will produce some nice minerals for collectors. The following note on it is taken from the July 1953 issue of MINING WORLD (121 Second St., San Francisco 5, Calif.) — "Here's the start of the Young Mine" page 52.

This new operation is known as the Young Mine whose ore body was discovered in 1951. It is located near the village of New Market, Jefferson Co., Tenn.

TEXAS — Hubert Williams, 306 W. Walker, Breckenridge, Texas, has sent in a nice specimen of grayish-brown fusulina limestone. The 3x3½ specimen is literally coated with fusulinas, (fossils which look like grains of oats). This fusulina limestone outcrops along a creek near Breckenridge, Stephens Co., Texas. "You can find piles of the loose grains in the creek," writes Mr. Williams in his letter of June 19, 1953.

Incidently Mr. Williams had a very nice write-up in his local paper of Sunday, May 31, 1953 (BRECKENRIDGE AMERICAN) which not only described his mineral collection, said to be one of the largest in the state, but it was illustrated with his picture and some of his minerals.

Mr. Williams is a radio service technician.

UTAH—Some few months ago Dr. A. L. Inglesby, Torrey, Utah, wrote us:

"Almost within the town limits of Escalante, (Garfield Co.), Utah, is an

area where tons of petrified bone can be picked up. Some is choice but much is just bone, and pieces weighing in excess of 200 pounds."

VERMONT—The following item on a garnierite locality in Vermont has been sent in by R. G. Kellogg, 86 Summit St., Waltham, Mass. It is dated July 20, 1953, and reads:

"I have some good specimens of garnierite from an occurrence in Vermont. The locality is between Newfane and Townshend in Windham County. The West River leaves the valley west of Newfane and has cut a deep gully, also a canyon below Townshend. Follow the stream on a dirt road (after leaving the main road), maybe a half mile up the hill. The stream is at the bottom of the gully, several hundred feet down, quite a scramble. The stream has cut through a serpentine formation and you have to break up the boulders in the brook bed (only in the serpentine). The specimens will be green incrustations on the serpentine. I saw some ¼ inch or more in the seams but it is chalky and falls off. You have to visit the locality late in summer when the stream is low. Prase and chalcedony of cutting quality are reported from there but I did not see any. I hope to go there again this fall, and then I may be able to tell you more about the locality."

VIRGINIA—The most famous manganese mine in Virginia is the old Crimora mine at Crimora, Augusta Co. Here very nice botryoidal masses of dark gray to black psilomelane used to be found.

WASHINGTON — G. W. Weber, 1320 Portland Ave., Walla Walla, Wash., has donated some nice spherosiderites which he found in an old State Highway quarry (no longer in operation) near Dixie, Walla Walla Co., Wash. The spherosiderite occurs as dark brown rounded masses "balls" in cavities of dark gray basalt.

WEST VIRGINIA — From a letter dated June 17, 1953, sent in by Robert L. Cox, 228 Elk Creek Ave., Girard, Pa., we have extracted the following:

"This past fall, winter and spring I have been attending the Penn State College. While at college I made two mineral collecting trips.

"The first was while I was on a cave exploring trip into West Virginia with the Nittany Grotto (wild cave exploring club). We visited a cave in West Virginia called the Sinnit Cave, which is near Sugar Grove, Pendleton Co., (0.4 mile northwest of Moyers P. O., on the south side of Whitethorn Creek). The passages in this cave are torturous so that the cave is nearly inaccessible to anyone except well equipped cave explorers. In one room of this cave I collected specimens of curved gypsum fibers and managed to get some out in reasonably good condition."

A nice specimen of the curved white gypsum, on gray chert, was sent in by Mr. Cox.

WISCONSIN — Lustrous cleavable masses of galena have come from the lead mines at Hazel Green, Grant Co., Wisc.

WYOMING—We have recently received what we believe to be the longest list of minerals and mineral localities of Wyoming ever printed. This list is called "A Mineral Collector's Guide to The Jade State — Wonderful Wyoming." It consists of 11 pages, sells for 25 cents per copy, and published by Gritzner's Geode, 135 No. Sirriene St., Mesa, Ariz.

ALASKA—A 4½ mile tunnel is being bored through Goat Mountain in the Chugach range to tap water from glacier-fed Eklutna Lake to generate power for the Anchorage area. We hope some subscriber in Anchorage, Alaska's largest city, will visit the Eklutna Tunnel and report to us on what minerals are to be found in it.

BOLIVIA — A group of small but beautiful xls of dark gray cerussite coated with tiny lustrous lead-gray galena xls, has been donated to R & M by H. P.

Morissette who formerly resided in La Paz, Bolivia. Mr. Morissette is now at Mina La Luz, Siuna, Nicaragua.

"The specimen comes from Animas, Bolivia, from a vein containing galena, sphalerite, quartz, and associated minerals," — on label with specimens.

CANADA—A most interesting specimen of molybdenite as small plates with various minerals, has been sent R & M by John W. Edwards, 305 Avenue Road, Toronto 5, Ont., Canada. The best way to describe it is to repeat what is written in Mr. Edward's letter, dated July 28, 1953.

"I have just run into something which I think is very unusual—"Radio-active Molybdenite" and, knowing your particular fondness for Moly specimens, I have forwarded you a specimen, by separate mail. As this is a staking proposition I cannot give you much information, other than to tell you that it came from an old mine near Dacre, North Renfrew County, in Ontario, Canada, which, during the first World War, was operated as a Molybdenite Mine.

"A friend of mine borrowed my Geiger-counter the other day, and, when bringing it back, also brought me a large piece of rock, composed of Molybdenite, Pyrite, Pyrrhotite, Biotite, etc., in a very-much-altered Pyroxenite (which is the typical "country-rock" in area). Upon breaking the large piece of rock for further examination, I found that only the Molybdenite "kicks" on the Geiger-counter, the other sulphides do not react.

"This hunt for Uranium and Thorium is turning up a lot of surprises in "mineral-associations" in Ontario, these days.

"I am sorry that the specimen is nothing to look at, but, I have always found unusual minerals much more interesting than just "pretty" ones. If I turn-up anything else interesting, I will send it along to you."

ENGLAND—Fine and brilliant flat, black xls of hematite, on massive hematite, and associated smoky quartz xls, have been found near Ulverston, Lancashire, England.

GERMANY—Idar-Oberstein in Germany is world famous for its gem-cutting establishments. Last spring one of our subscribers, P. D. Boerner of Australia, visited Idar-Oberstein and not only sent R & M some nice specimens from the locality but in addition two most interesting pamphlets. One pamphlet is titled, *Idar-Oberstein,* 22 pages, very nicely illustrated (also contains a 2-page map of the locality) and is printed in German, English and French.

The other pamphlet, titled *Idar-Oberstein, a centre of gem culture two thousand years old,* is a 16-page, illustrated publication and all in English. In addition 6 plates of gems (both rough xls and cut stones), all in color, 8x11¾ inches, were also enclosed. These plates are really beautiful!

GOLD COAST—From Walter McNamara, 7 Harmony St., Danbury, Conn., we have received some interesting minerals which he collected in the Gold Coast, in West Africa. First let us quote his letter of June 29, 1953.

"Because of your stated interest in the oddities and occurrences of minerals here and there in and out of the U. S., I'm taking the liberty to send you some minerals on the assumption that they might be considered a bit on the odd side and of possible interest to you.

"I'm strictly an amateur in rock collecting and tho I have several books on descriptive mineralogy I haven't been able to find a description that quite fits the appearance and occurrences of the specimens sent you.

"I got them from a shoreside shale deposit in the port of Takoradi, on the southern coast of Gold Coast, West Africa, a couple of months ago. I've been a seaman in the Merchant Marine for several years and my last voyage was out that away — or rather my last two voyages were out that way, comprising a total of six months, spent for the most part on the west coast of Africa. Saw nothing else resembling the stuff sent you in any of the other ports in 8 different countries.

"The area where I picked up the stuff about 6 or 7 square acres in extent, was being excavated for harbor fill at the time. Where the ground had been turned up the surface had a markedly burned-over appearance—and in fact I first assumed the contractor had done just that, to rid it of excess surface surfur, of which the area appeared to be saturated, but a talk with him proved otherwise. He stated that the ground just naturally took on that appearance a couple of days after the ground was excavated. After a rain, he further stated, the surface on drying out (very hot in that area) rolled up in almost cylindrical sheets, somewhat like tarpaper, and then powdered down to a hard, cement-like paving.

"At one place in that area there was a pool of water on either side of a partially excavated outcrop. One pool (deep) was colored a regular slaughter-house red from its contact with one side of the outcrop; the other pool (shallow) was colored a bright emerald-green, with lots of delicate green crystals of the same shade clustering round and about, some in the water, some out (which have lost some of their color since I picked them up). The water in the pools may have been either rain-borne or seaborne (I couldn't determine), but the same green crystals occur in cavities in the shale, intergrown with silk-like clusters of fibres (resembling asbestos, sample sent you) well above the water line, well back from the shore line and protected from direct rainfall."

For an amateur mineralogist, Mr. McNamara is a keen observer and we are grateful for his notes and for the minerals sent. From the specimens received, we believe the excavated area is in shale that is heavily loaded with sulphides (possibly marcasite or pyrite) which have decomposed forming various sulphates of which 3 were sent us—gypsum (selenite) as thin wafer-like gray sheets; halotrichite, a mass of white silk-like cluster of fibers (see above) parts of which have been stained yellow by sulphur; and melanterite, yellowish incrustation on gray shale. The melanterite was greenish when first colored but has lost some of its color.

GREECE—Syra is one of the compact group of islands, known to the ancients as to us as the Cyclades, in contradistinction to the Sporades, or scattered islands. The Cyclades are a group of 12 islands in the Aegean Sea and belong to Greece.

Syra, with an area of 55 square miles, is high and mountainous, its highest peak rising about 4000 feet above sea level.

From Syra (also known as Syros) we have a nice small specimen of green soapstone (talc) in which are imbedded lustrous black xls of magnetite. This specimen was sent us by John J. Lavranos when he formerly resided in Athens, Greece; he now resides in South Africa (P. O. Box 10257, Johannesburg, Transvaal).

IRELAND — Patrick Ronan, 2436 Marion Ave., Bronx 58, N. Y., with his sons, Thomas and Larry, called at the offices of R & M on Saturday, June 13, 1953, and we had a nice visit with them. He told us an interesting thing—that when he was a boy in northern Ireland, he used to hear his neighbors talk about petrified wood being found around Lake Neagh in northern Ireland—but he never saw any of it.

NEW CALEDONIA — A very nice lustrous pale brassy-yellow mass of pyrrhotite from the island of New Caledonia in South Pacific was sent us by Fritz G. H. Carlson, 12 Beach St., Fairhaven, Mass.

"Picked up by a marine friend from great rock piles of it, somewhere in New Caledonia. If there was any name for the mine, he does not know what it is." Item in Mr. Carlson's letter, dated May 30, 1953.

NEW ZEALAND—A very nice thin slab (polished) of the famous New Zealand nephrite, was donated R & M by James R. Gudger, M. D., 144 Langdon Ave., Irvington, N. Y., when he visited us with his family Saturday, Aug. 8, 1953.

Dr. Gudger was in New Zealand, during the last World War, and he had purchased the slab and others from a jeweler in Christchurch. The locality for the nephrite is Otago Pass, near Christchurch, South Island, New Zealand.

PUERTO RICO—Two very interesting specimens have been sent R & M by David A. Burgess, Calle Atlantic 3, Santurce, Puerto Rico.

The specimens are light brown in color and have a sieve-like structure (crystal cavities after coral). The cavities average ⅛ inch in diameter and are roughly rounded or 6-sided (hexagonal). The cavities are lined with white to brownish drusy calcite. About ½ of the face of the smaller specimen (one side only) is coated with a second growth of drusy calcite which cover entirely the cavities; this smaller specimen fluoresces yellow under the long wave lamp and phosphoresces pale yellow (same reactions but much paler under the short wave lamp).

The label with the specimens reads:

"From the Rios Quarry, between U. S. A. F. "Ramey Field" and town of Aguadilla, Puerto Rico.

"A limestone quarry operated commercially for concrete aggregate. Many pockets of fossil shells and some clear xled calcite groups."

SCOTLAND—When the Bishopton railroad tunnel was being bored in 1858, at Bishopton, Renfrewshire, Scotland, magnificent groups of snow-white datolite xls associated with green prehnite, were found.

SOUTH AFRICA—Three interesting specimens from the Cradock District, Cape Province, South Africa, have been donated to R & M by F. C. M. Bawden, F. G. A., New Consolidated Gold Fields Ltd., P. O. Box 1167, Johannesburg, South Africa. One is a brownish mass of limonited wood (limonite pseudo after wood); another is an earthy hematited wood (reddish limb sections in a dark smoky quartz rock made up chiefly of smoky quartz pebbles); and the third is a dark brown mass of petrified wood.

These specimens were not shipped but given for delivery to Edward Graf, P. O. Box 1432, Paterson, N. J., a few months ago when Mr. Graf was on a trip to South Africa. Mr. Graf made a special trip to Peekskill not only to deliver the above specimens but to donate some others, including a number of sands, which he, himself, had collected. It has often been said that mineral collectors are the most wonderful people and here is a typical example—Mr. Graf bringing all those specimens from South Africa for R & M!

SWEDEN—A nice deep green mass of fluorite from the fluorite mines at Snogge, near Simrishamn, Skane Province, Sweden, has been sent R & M by Gerhard Kopen, Skanegatan 3, Nybro, Sweden.

SWITZERLAND — Very fine, deep black, gemmy xls of smoky quartz have been found in granite in Val Guif, Tavetsch, Grisons, Switzerland.

WALES—A group of nice little rock crystals associated with calcite xls and one small brassy chalcopyrite xl, all on massive milky quartz, has been donated to R & M by P. D. Boerner. The locality is a road metal quarry near Halfway, (between Llandovery and Senny Bridge), Brecknockshire, Wales.

Mr. Boerner formerly resided in London, England, but has left for Australia and we do not know as yet his new address.

COLLECTING SANDS

(Continued from page 477)

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THE AMATEUR LAPIDARY

Conducted by COMMANDER JOHN SINKANKAS
Certified Gemologist, American Gem Society.
1107 S. Oakcrest Road, Arlington, Va.

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

CUTTING THE FREEFORM

By LUCILLE SANGER
1090 West Oxford Avenue, Englewood, Colo.
Co-Author of "Cabochon Jewelry Making"

The lapidary hobby is old enough now that many cutters have ceased to be interested in cutting the conventional cabochon when cutting for their collections. The freeform, whether cut with the usual flat bottom and cushioned top, double cushioned or in modeled form, is coming into its own.

"Freeform" is an art-term meaning: 'without a definite pattern'—Odd shapes to you. The true freeform is not duplicated as its shape and dimensions are determined by the size, pattern and shape of the slab, pebble or small piece of stone being cut. Cutting freeforms brings out the creative ingenuity of the cutter and are most interesting to work upon. Using this method one is better able to preserve the original beauty of the piece of stone and thus the cutter's collection is vastly improved. If it is desired to mount the stone, other than ordinary methods may have to be used. Thus one stroke of ingenuity leads to another.

One of the reasons that cutting and polishing rocks is such a fascinating hobby is that each cutter has a different way of doing things. Discussion of technique is endless and absorbing.

When we first started on our rock hobby it was fashionable to cut out the center of a slab and make a cabochon from it. It was our opinion that the most interesting part of the stone was often discarded. We had not been cutting very long before we decided that this method was not for us. For instance an end piece, too small to yield more slices, often gave us an idea for a stone, but the finished stone would be a far cry from the conventional cabochon. Then too, the very edge of the stone would have the most attractive patterns and colors, both of which would be ground away if a conventional cabochon were cut. Sometimes we have sawed little old gnarled agates which would not yield anything much larger than a snake eye if cut as usual, but when we "let nature takes its course," the result was always interesting and often resulted in a truly beautiful stone.

Many slabs have a pattern arrangement which suggests a shape for the stone. Small stones often yield irregular slabs just large to make an irregularly shaped cab, conventional in every respect except for the shape of the outside edge. This shape may be anything, but is not truly satisfying unless it has balance, rhythm and unity. See Figure 1 for examples of flat cuts with cushion tops. The exception here is the Montana agate with the black border and the narrow carnelian band. It is flat topped.

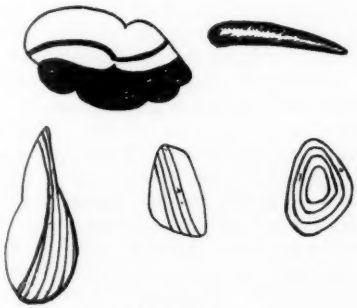


Figure 1

FIGURE 2

End pieces invite the imagination to find forms in three dimensions and to disregard entirely the rules for cutting cabs. Often this three dimensional cutting brings out a beauty of pattern which cannot be found in a cab cut from a slice of the same material. See Figure 2 for three dimensional suggestions.

MODERN EQUIPMENT O.K., SAYS GARDEN STATE MINERALS

In reading over the May-June issue of your valued magazine we came across an engineer's letter to you pointing out various flaws in lapidary machinery as presented to the cutting public. This letter is a sort of rebuttal to the engineer's argument against modern lapidary machinery.

Comparing the operation of a $300.00 tool grinder with the operation of a $39.50 lapidary arbor is a bit far fetched. At that we would lay even money that—doing its given job—the lapidary arbor will last just as long as the tool grinder.

The arbor referred to in the letter brings to light the fact that it is machined from aluminum. True, aluminum can be machined faster than steel. However, aluminum saves a lot on postage and is adequate for the job it is called upon to do. And ¼ inch bolts are sizeable bolts. The letter claims that four of them would not hold the arbor down. If they won't it would probably be adviseable to weld the arbor to the table.

We have never found the space in back of an arbor to be valuable. The engineer claims this is the wrong place to set a motor—underneath the bench table would be better. In our estimation this is the worst place to set a motor because grits, water, etc. can fall into it too easily while little or no grits can gain access to it if it is in back of the arbor. Also, in changing arbor speeds, the alignment can be checked much easier on a motor in the rear.

The belt provided with the machine may have been too short for the engineer's set up and the pulley may have been reversed. However, for 100 other people the belt is long enough and the pulley runs correctly. The engineer also claimed the bearing cover should be split. Maybe the manufacturer, who has been making lapidary machinery for a long time, didn't split the cover so curious people wouldn't take the bearings apart and get into trouble.

The engineer's letter claims the ball bearings are noisy. It's a question as to which is noiser, the stone being ground or the arbor. Actually the small noise coming from the arbor is helpful to the haus-frau. It lets her know that the master is down in the basement at work on the rock on the rock pile and is not galivanting around outside.

We have found the tool and stone rests to be more than adequate for wheel dressing and stone grinding and need no strengthening as the engineer suggested.

The engineer claims that the arbor frame should have a switch on it to stop the motor and start it, like a shop tool grinder. Most shop tool grinders are run dry. Placing a switch on a grinding arbor means having wires in the way, water getting down in the switch, etc. Very

dangerous, if the floor is wet. Much better to pull the motor plug.

In 15 or 20 minutes ½ inch of goo gathers in the bottom of the engineer's trim saw tank. That's fast work. It usually takes us two hours to do that. Also we don't use a long handled spoon to take the goo out nor do we try to make it run out of the small plug. We just mix the water and goo around and siphon it out. Much faster, although the taste is bad.

The letter also states that there is poor visibility in viewing the cutting action on the large slabbing saw. When we first started we too were curious and peeked under the cover. All we saw was a mess. Very unappetizing. No longer do we sit around watching the saw cutting the stone. In fact we are very happy when we hear the thump of the other half of the stone hit the bottom of the catcher so we can shut the danged thing off.

We agree that the prospective buyer should ask the man who owns one before buying—and the average rockhound does just that.

All the foregoing is based on our experience of 8 years of cutting and polishing. This includes cutting over 20,000 pieces of all sizes and polishing over 10,000 flats. Trim sawing, cutting and polishing over 5000 cabs of all kinds, making all kinds of spheres, paperweights and facetting. In doing this work we used Rube Goldbergs in the beginning and regular lap equipment later and are happy to say that we find that 90% of the lap equipment on the market today is A#1 and the faults are so minor that no attention is given them. The manufacturers are doing a swell job in giving the amateur and professional cutter professional equipment that doesn't cost much and does the job it is supposed to do. Every one of our customers is satisfied with machinery sold them—and there are quite a few tool makers and machinists amongst them—men who know. Bravo to the lapidary manufacturer!

Milton W. Avery
Garden State Minerals
332 Columbia Blvd.
June 6, 1953 Wood-Ridge, N. J.

COLD DOPPING

Here's an idea that has come in recently—maybe you can use it:

"While vacationing in Oregon during fall of 1952, I learned of a new, simple and clean method of attaching dop sticks to cabs or slabs.

Take your ½ inch or other diameter dowel dop stick, saw end smoothly, then dip in Sodium Silicate (waterglass, purchased at any drug store), stand stick vertical on cab or slab and leave preferably over night. If used within a day or two, will hold securely. After grinding and polishing and ready to remove gem, soak in water over night, or if in hurry, saw off stick close up. Water is a solvent for Sodium Silicate and it leaves the gem clean, needing only rinsing with clear water. As this is a cold-dopping method, there is no need to heat blanks for mounting and removal."

John E. Andress
2617 Country Club Terrace,
Rockford, Illinois

R & M Is The Best!

Editor R & M:

R & M is the best magazine there is for rockhounds. I especially like the "World News" section in each issue giving localities by states. My home is in Cincinnati and several states are easily accessible for week-end trips.

A/2c William E. Kay
Rantoul, Ill.

July 17, 1953

Back Issues Now In Demand!

Editor R & M:

Some time ago a friend gave me several back issue (1927 and 1936). I found them most interesting. I hadn't realized how much useful information could be gained from back issues. I am now going to start building up my collection of back issues so you can expect an order every so often.

Robert L. Cox
Girard, Penn.

Aug. 3, 1953

FOSSIL DEPARTMENT

Conducted by A. ALLEN GRAFFHAM

Box 419, Ardmore, Oklahoma

With little material from the readers of this column to draw from, I was faced with the dilemma of writing the entire column for this issue. However, my wife came to my aid with the following story on White Mound, famous old Oklahoma fossil locality.

WHITE MOUND

A Devonian Fossil Locality
By Beverly Graffham

Southern Oklahoma boasts a wonderland of fossil localities. There are many places where even the layman can pick up a small sack full of brachiopods, gastropods, pelecypods, corals and bryozoans, with an occasional trilobite, cephalopod, crinoid cup, and sponge thrown in for good measure. One of these localities is the famous "White Mound," south of Sulfur, Oklahoma. It is visited every year by numerous students and collectors. The geologic horizon is the Harragan marl; the age, Devonian.

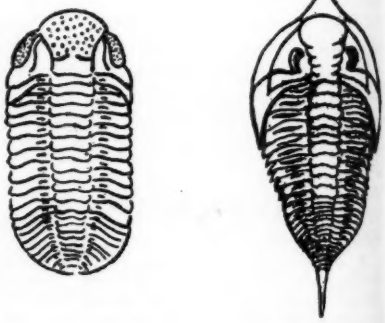
The "mound" itself is now only about ten feet high, but at one time, was of considerable height. Much digging has been done here, and this coupled with the work of erosion, has served to reduce the mound to its present size. The mound provides some good specimens to the observant collector. The immediate area around the mound also produces some nice fossils.

By far the most abundantly preserved fossil at this locality is the brachiopod, a bilaterally symmetrical marine animal with two unequal valves. It is commonly known as the "lamp shell," and is thought to have inhabited shallow seas. The ground here is actually paved with brachiopods of several genera, many of which are broken shells, but some are beautifully preserved. There are approximately 200 living species of these animals today, but fossil species of brachiopods run into the thousands.

A nice selection of corals can be obtained here. It is possible to find many attractive little cup corals, and some specimens of the colonial coral, *Favosites*. Some corals are solitary animals, but many grow in colonies. They usually inhabit very shallow parts of the sea.

One can sometimes find straight cephalopods, occasional gastropods, and a few rare bryozoans.

Crinoids are frequently known as "sea lilies." The body consists of a stem, a cup-shaped portion which serves as a stomach, and arms which gather the food. Crinoid stem segments are found at White Mound, and rarely, a cup of *Edriocrinus* can be collected. Another locality of the same age, not distant from White Mound, produces large numbers of crinoid bulbs or anchors. These have been named *Camarocrinites*, but they be-



The two common trilobites found at White Mound, Oklahoma.

long to the crinoid *Scyphocrinus*. Complete "crowns" (the entire body of the animal) have been recovered at one locality and several loose cups were found at another.

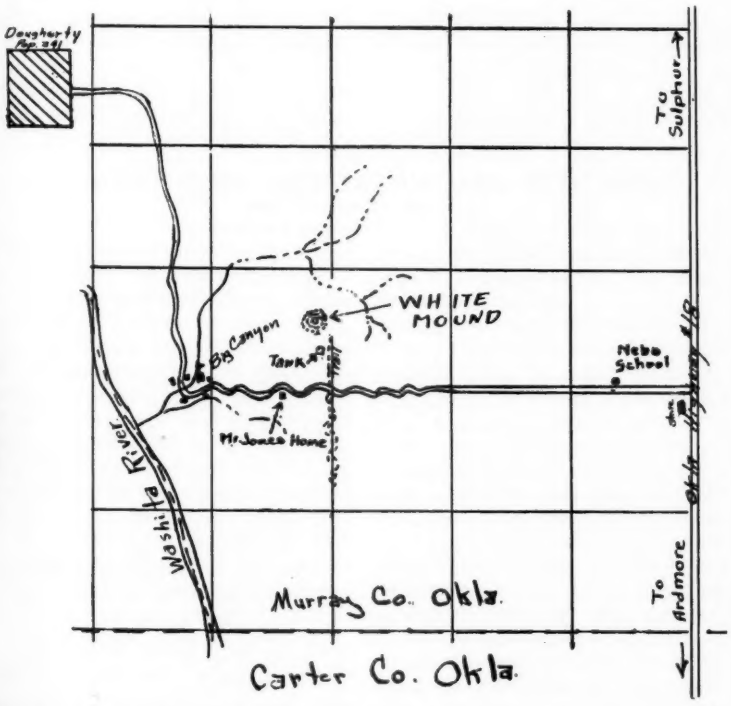
The fossil which usually attracts the most attention is the trilobite. This is understandable because it appears similar to insects, crabs and lobsters with which we are all familiar. It has a head, eyes, a segmented body, and a tail. Trilobites are thought to be the direct or indirect ancestors of all other joint-legged invertebrates. Trilobites can be found at White Mound. The most common of these is *Phacops*. One can find many heads and tails, and a few complete specimens. Other trilobites to be collected here are *Dalmanites, Otarion, Proetus,* and *Odontopleura,* but these are quite rare.

For those interested in collecting from this locality, directions are now included:

Editor's Note:

A word of warning to people who would collect here; a year ago a fire was started (presumably by collectors) on this property. It destroyed many acres of grass and did considerable damage to trees.

Mr. Jones, who owns this property, lives near by on the gravel road between Nebo and Daugherty. Check with him before entering the property to collect. Usually permission is readily granted, but in a very dry summer when fire danger is at a maximum, access may be denied. The best collecting weather in Oklahoma is from March through May, and October through December.



Map showing location of White Mound, Oklahoma. A hurried sketch by your editor.

In a recent letter from Frank Crane, 710 Dan Waggoner Building, Fort Worth 2, Texas; Frank writes of collecting some excellent echinoids from a near-by locality in the Weno formation of Lower Cretaceous Age.

Frank has a very large collection of echinoids from all over the world and a very fine trilobite collection as well.

Your editor has it on good authority that a new fossil dealer will soon enter the field with specimens from world-wide sources. Advanced price lists show most specimens in a very reasonable price range.

Most fossil collecting in this area is dependent on good washing rains. We have had several good rains in July, but the hot weather that accompanied them and the relative increase in humidity made collecting miserable. I guess those washed-out fossils will have to wait until fall.

I will try to answer or acknowledge all letters from readers. Articles for this department are earnestly solicited. (Send them directly to your fossil editor.) Let me hear from you! I would like to hear where you collect, what you collect, and what exchange materials you have. I would especially like to have notes on localities.

A few notes on my own collection; I collect pelmatazoa with the exclusion of echinoid. I have several thousand crinoids, blastoids, cystoids, and starfish; all classified and labeled as to locality. These are housed in a dustproof cabinet of shallow drawers. My wife collects trilobites, and these are also stored in this cabinet.

Since there are so many fields within paleontology, I think it is wise for the collector to specialize in a certain type or types of fossils. In this way the collector may become a specialist in his field. At the same time, because he has specialized, he retains his interest in paleontology, and does not lose interest because of being faced with the mass of knowledge that must be assimulated to become acquainted with all fields of the subject. My advice then to beginning collectors would be: choose the type of fossil you are most interested in, to collect and study, but on your collecting trips collect all types of fossils and use these and your duplicates for exchange.

GARNETS ARE WHERE YOU FIND THEM

By CHAS. S. KNOWLTON
143 N. Acacia, Fullerton, California

As with Gold, one need not be too much surprised to find garnets in unsuspected places, or matrices. And a collector very well might find more garnets if he were to examine many of his mineral specimens that he has classified under other headings. To illustrate:

For quite a number of years I have been exchanging minerals with Glen Kiser, of Douglass, Kansas. At first it was mostly quartz and calcite and then later some sands in which I was but little interested. Then I started to collect Garnet Sands and about the same time Glen thought that he would try to get some of them, on the side. He seems to have a major collection of more or less plain sands, but recently many garnet sands.

A short time ago Glen sent me some sand from that portion of the Bad Lands of South Dakota in which the Sand Crystals are found (Rattlesnake Butte, Washabaugh Co.). Included were singles and groups of the smallest sand crystals that I had seen. In looking at the sand I found numerous tiny garnets along with some sapphire, rose quartz and other minerals. And on some of the tiny sands are many tiny garnets as well as the other ingredients. Then upon examining a dozen or so larger sand crystals I found that most of them also have garnet on the outside. Have not broken any to see how deep they go.

When one is really interested in some particular thing he is more apt to observe that thing than is one who is less interested, so he is likely to find it in unsuspected places. And frequently that is what makes speciallizing the more interesting.

MINERAL SHOPPER'S GUIDE

Conducted by CHARLES A. THOMAS
706 Church Street, Royersford, Pa.

Advertisers are invited to send notes or samples of their products. This service is free.

Harvest time is here and it will not be too long 'till Christmas. That low mumbling sound is from two kinds of Santa Clauses . . . one kind grumbles, "There's not enough time" . . . the other says, "Too early to think of Christmas."

There are books to be bought . . . mineral books, of course. And minerals to be readied for Christmas gifts to friends and relations. Minerals to friends and relations? Why not? Remember the shadow box frames we mentioned some time ago, the small ones antiqued with jade green and brown paint with the velvet back and the quartz group mounted in the center? And, of course, there are many stones to mount in silver or gold, or a primitive type in copper or wood. There really isn't much time, but the dealers are ready for that last minute rush and crush. If you ship by mail, too late, you will find out about the crush.

Speaking of books; if you want a good list, send for it to Leland Quick at Palm Desert, California, or Ward's in Rochester, N. Y., whoever is nearer. Good books are most acceptable and there are so many fine ones to choose from. There is a new one written and distributed by the author, 'Rockhounds in the Making' by Marguerite Beymer of 527 E. 8th St., The Dalles, Oregon, for those who have everything else. Remember the power of the written word and send for a good book or two, today.

If someone has given you a load of nice mineral specimens with which to start your collection why not send for a real nice 'something special' in the mineral specimen line to show your appreciation and send it to him or her for Christmas. If you do not know what to send the collector who seems to have everything, then let the dealer make the selection.

Once in a while a dealer feels like bragging. Plummer's Minerals tell us that the best way to do a little bragging is to get in touch with the M.S.G. Thanks! We sure try to be helpful and hope we succeed. Plummer's sent us some well selected samples again . . . from the four corners of the world.

Small wonder they are bragging this time. Plummer's sent us some unusuals, all nice and clean and purty. They tell us that they have a splendid contact in Spain, and we know it is just that . . . splendid. Two bright red cinnabar masses, two lovely pink cobaltocalcites and a rather large pyrite represented the excellent Spanish specimens. A beautiful white specimen of harmotome from Scotland, full of glistening white crystals is especially lovely. A nice crystal of gem aquamarine in nice color came from Karibib, S.W. Africa. The gem is several carats in weight and a beauty. And here is a cluster of hexagonal crystals of aragonite from Spain and a colorful specimen of greenish and metallic chalcocite-chrysocolla with a nice splash of native silver across the top . . . from Mexico. Plummer's are top notch dealers in fine minerals, but we would point out that their prices are definitely not top level. Such specimens as listed above may be obtained at surprisingly low cost, considering the quality.

Mr. C. E. Golden, of Easton, Pa., sent us a box of jasper and Easton area specimens. Also in the package were some especially interesting chunks of fluorite from Kentucky. Mr. Golden is not a dealer . . . just likes to collect and share . . . a very commendable attitude. He writes that a recent excavation has unearthed some Eastonite, a now very rare mica, and that he is going to try to gather as many nice pieces of the yellowish mica as possible. The lovely red and brown jasper comes from Brown's Terrace near Easton. He fears that Brown's Terrace is now inaccessable to future col-

lecting due to some thoughtless collector who stooped so low as to steal nice large chunks of jasper from the owner's rock-garden. Mr. Golden has selected very valuable and interesting large specimens with which he will replace the empty spaces in the garden . . . to prove that all mineral collectors are not thieves. Nice missionary work, Mr. Golden. You deserve the thanks of many collectors.

Some weeks ago we were urged to visit the Belz Farm near Landsdale, Pa. The special invitation, this time, was to view some of the very excellent photomicrographs that Mr. Hartshorn had sent Mrs. Gene Belz. The double kodochrome prints were viewed through a stereopticon viewer which Mr. Hartshorn had included and we were more than thrilled with these superb pictures. To name a few, there were bismuthinite, calamine, higginsite, cuprite, hopeite, mimetite, chalcotrichite and calcite on stilbite, all in sharp three dimension and fine color. The calcite in the picture looks strangely familiar, Mr. Hartshorn, and we note that the actual specimen originated at Kibblehouse Quarry, near Perkiomenville, Pa. While enjoying Mrs. Belz' usual hospitality, we noticed a tray of excellently dyed Brazilian agate and a plastic box filled with turquoise baroques in fine color. We were informed that these fine specimens came from Grieger's, the well known Pasadena dealer.

One week of each year we try to get a little rest and recreation at Lake Wallenpaupack, the largest and most fish-filled lake in Pennsylvania. As for minerals, we have found little of interest in that area. However, we always keep a sharp eye open for possibilities no matter where we go. On the shores of the lake are many large masses of sandstone and occasionally there are prints of wood and plant life on these rocks. None are worth too much attention. We did find a small quartz point which glistened in the sun on a sandy strip of beach. It was as limpid and fine as any Herkimer "diamond." We also keep the other eye sharply focused for anything which might look like someone searching for something wherever we may be. We noticed a young man digging industriously on a small island in the lake. Every day he would beach his outboard motorboat on the sand and mud bar of the tiny island and commence to search and dig. This was too much for us, so we rowed our boat to the island and investigated. Indian artifacts, we were told, are to be found on the island. Axe heads, arrow points and so forth could be and had been found there. The young collector showed us a dozen or so chips of rather nice jasper in red and yellow which were obviously not native to the region. We could only guess that the Indians of this Pike County area exchanged fine otter and other animal skins for jasper originating in the Reading Hills near Allentown, Pa. The little island was once a sharp knob, possibly selected because it afforded a fine all-around view of the Wallenpaupack Valley; not that the Indians admired the view, but for security reasons . . . while they fashioned implements from jasper.

Once again Frank Waskey sends us a package from Alaska. Three specimens of satiny pumice nodules in silver, tan and pinkish-grey, a surprise specimen of rock with platy zeunerite crystals and a fluorescent specimen of calcite which reacts a strong creamy tan and of white only under the short wave U. V. There is a very short phosphorescence of approximately one-fiftieth of a second of a red-orange hue. Under the microscope there are some kind of metallic inclusions which appear to be small irregular crystals of sphalerite, though the possibility of a tungstate is not discounted. The fluorescence of the calcite is so much like that of powellite, that we are inclined to expect something of the sort, if and when the specimen is investigated more thoroughly. If this calcite is offered for sale, it will represent a new fluorescent type to be added to fine collections. There is no hint whatever of fluorescence under long wave. The zeunerite specimen shows fine torbernite-green laminated tabular plates sufficiently different from the Utah Tintic zeunerite to be very interesting. This specimen was forwarded with the

compliments of Maxwell R. Kennedy, D.D.S., Nome, Alaska.

Mineral fluorescence seems to be a very thoroughly investigated phase here of late. There are not many new types of specimens "coming to light." Usually a new specimen is merely a new color of an old established mineral like calcite or fluorite or wollastonite. However, there are many types of lamps to use to bring out the best in all of them. The filter is all important. Commercial filters are good . . . meaning the type bought in quantity by lamp manufacturers and used in short wave lamps. There are specially selected filters, however, which do a sufficiently different job of activating to make their use and acquisition worth while. We recall seeing a homemade short wave lamp demonstrated for us a few years ago which was very powerful with a double or triple assembly of cold quartz tubes. The filter was not out of the ordinary, therefore the greatest defect, after all the time and money spent on assemblying the triple quartz tubes, was in the weak filter. No doubt, this lamp, with a better filter, would have been easily the most powerful short wave lamp ever built. It is next to impossible to order a "special" filter. We have had only three in the last ten years which we might class as special and these were not "selected" by us. Generally a thicker filter could be classed as at least different from the commercial run and will give different reactions on certain minerals. We could fill pages on this and probably will do so sometime later.

Once again reports are coming in to this department concerning how well the touring collector is treated by the majority of our dealers. We say "majority" simply because there is always one report where it seems that someone along the line does not measure up to the accepted standard. This is where this department comes in. We have been trying to get the readers of ROCKS AND MINERALS acquainted with the better dealer by passing on meaty bits of stock mineral information so that the reader-buyer will not hesitate to order by mail. Prospective dealers who should want the name as well as the game, should find out for themselves how well a reliable dealer packs his specimens for shipment, to say nothing as to how he selects clean material and labels them. We know a grocer who manages one of thousands of stores of a huge chain. It is apparent that he has been ordered never to throw anything away, but to put it on a bargain counter . . . mildewed strawberries, bad oranges, spoiled cantaloups and such . . . what a mistake! So give the beat-up old drab looking items the heave-ho and sell only the very best possible.

One of the finest mineral collectors in the United States told us some years ago that he gave up trying to assemble a decent collection 50 years ago by visiting localities and that he reserves such visits only for relaxation and the urge to find something new. His collection is superb, yet only about a dozen specimens out of 500 were found in the field and considered good enough for his display.

We have stated many times that it is possible to find fine material, even better than some dealers can supply. The advanced collector recognizes that this is a fact which occurs infrequently. Some have told us that they wish they had the money it costs to make the many wild goose chases after the specimens that were not there . . . and had put that money into good specimens secured by means of the silver-pick! No one can deny the real pleasure in poking around in mine dumps and quarries . . . or the finding of good cutting material in near or remote regions.

Cal Gettings is in the news again. He has sent us some nice specimens from Scotland which represent the items in his ad. There is a nice white analcite with copper from Boylestone, chrysocolla in prehnite from Kilmacolm, greyish-green prehnite from the same locality, and rectangular purple fluorite crystals in fluorescent calcite. Cal always manages to slip in a nice fluorite specimen from Wood County, Ohio. Here is a chance for collectors to get Scotch material . . . through Cal Gettings. Look up his ad.

We received a response from the notes on slag from Miss G. M. Hannen of Chicago. Miss Hannen sent some intensly blue (in daylight) nodules of beach-tumbled slag. Miss Hannen is correct in stating that the slag will polish into nice blue stones. Hers were picked up near Leland, Michigan, and were evidently carried by Lake waters to the point where found. There were also two or three samples of greenish glassy slag nodules which would make transparent or translucent stones when cut. Bright blue slag masses are often found near old furnaces in Pennsylvania as well as in other states where old furnaces abound. Something for the cutter to look into.

Mr. Ford E. Wilson, well-known collector, formerly from Portland, Oregon, now of Gallup, N. M., does not send us fine micros just to see his name in print. Mr. Wilson is genuinely enthusiastic about good micromounts and wants others to share in this interest. His latest bonanza is fine stibnite from the Oregon Queen Mine, Hay Creek, Oregon; carnotite from Uravan, Colo.; stilbite, Cascade Locks, Oregon; gmelinite, Springfield, Oregon; novacekite from Grants, N. M.; lead-zinc carbonate from Chihuahua, Mexico; emmonsite, Goldfield, Nev.; tyuyamanite, Dove Creek, Colo.; and a superb azurite from Socorro County, N. M. Thanks to Mr. Wilson who manages to get us back to the miscroscope at more than frequent intervals! No, we have not given up our interest, Mr. Wilson; just dabbling with something different occasionally to keep from getting stale. We still love beautiful micros so very much.

What about willemite from other localities than Franklin, N. J.? Why not? We often wished we could have a chunk or a slab from all of the world localities. The Valley Art Shoppe, of Chatsworth, California, sent us several nice pieces and a slab of nicely fluorescent willemite and calcite. In the package was a surprise specimen of the calcite with hydrozincite mentioned in their last issue ad. It is a fine crystalled specimen of reddish fluorescent calcite with a fine large cavity of tan colored hydrozincite which fluoresces brilliant blue under the short wave lamps. We mentioned a similar specimen some time ago and this really is superb. Look into their ads for the willemite-calcite and the hydrozincite-calcite material. The willemite comes from Trinity, Arizona, as well as the hydrozincite.

Willemite was once found in small amounts in Pennsylvania, at Friedensville, and there is a swell chance that it will be found again in the new mine which will start producing in the not too distant future. We are looking forward to such things as beautiful calamine, sphalerite, garnet, hyalite, quartz crystals, cadmium sulphide (maybe greenockite crystals, huh?) and others which we know are there in the ground waiting to be found. The only worthwhile specimens seen so far have been nice showings of goethite, thin seams of white material much like calamine and some meager showings of grey sphalerite, though we have not really investigated the new area to any extent in the past two years of casual inspection.

John S. Albanese is taking the bull by the horns with this micro phase. Bear in mind that his offerings are not tiny bits in general, but larger pieces in which there are plenty of micro possibilities. Some are smaller 1" x 1" and are priced down accordingly. It is excellent material, believe us. We have some of them and are thinking about getting some more while the getting is good.

We fell in love this past May when we saw a beautiful gold bracelet in a gift-shop window in a small town in central Pennsylvania. But the shop was closed and we had to continue on our way. The bracelet was set with exquisitely polished stichtite. As you may know, stichtite is the lilac colored masses in nice green serpentine which is sent infrequently to this country from Dundas, Tasmania. It is reported from the Black Lake District in Quebec, Canada, and we see now that it is coming into the country from Africa, being distributed by John Lavranos of Johannesburg, South Africa. See his ad and order some stichtite . . . our P. P. departments will help you with the money exchange in no time at all. It is so pretty. Just a hint to those who

have cut and polished everything in sight.

Thanks for your nice invitation to visit the opening of your new gift and mineral shop, Miss Helen Whitehead. We cannot send you flowers, but we are sending you some pictures of G. Washington which will do more good and for which we will let you pick something out to send to us. Miss Whitehead calls her new shop the Monadnock Mineral Shop and it is located in Marlboro, New Hampshire. Pictures of G. Washington, yet? Yep. Wish we knew about this grand opening sooner.

COLORING FLINT

While seeking a local source of cutting material it was found that yellow flint could be attractively colored and easily polished.

Coloring methods have been discussed in this column. Briefly they consist of soaking the cut stone in an appropriate solution, such as ferric nitrate, until the stone is impregnated, about a week for small stones. The stone is then dried and very cautiously and evenly heated until the color is deevloped. This can be done with safety in a test tube heated by a small bunsen burner flame. The tube protects the stone from drafts which might chill and break it and also permits observation of the process. If the tube is loosely stoppered even better protection is afforded.

The question arises, where can one get yellow flint, more cheaply than other cutting material? In seaport cities such as New York there are often places along the shore, often in city parks, where ships formerly dumped ballast. There, unlimited quantities of the English "beeswax" flint can be found. Such flint has a yellow waxy exterior and a pale tan interior. Such ballast is often largely comprised of cinders and smelting slag, an obvious indication.

Native flints and cherts have not been tried for ability to take color, but probably some of them would be satisfactory.

S. B. Butler
Queens College,
Flushing, N. Y.

QUARTZ CRYSTAL LOCALITY POSTED!

Editor R & M:

This morning two young men came to see me about digging quartz crystals on my farm.

This property has been posted for some time and in spite of it some people from miles around are still operating there with the result that we have to drive them out.

The place is being watched and under no circumstances will anyone be permitted to enter. It will save me a lot of trouble if you advise your subscribers that the land is posted and no trespassing.

DeWitt Dockstader
Dockstader & Farrell,
Johnstown, N. Y.

Aug. 31, 1953

Editor's Note:

A later letter from Mr. Dockstader tells us that his farm is located in the town of Mohawk, Montgomery Co., N. Y., six miles west of Fonda, on Hickory Hill road (cross road Barker). Collectors are warned not to trespass on the property as they are liable to be arrested and fined.

THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Items on Interesting Sands Wanted. — Please Send Them In.

Black Sand from Big Bug Dist., Arizona

C. V. Mills, 32 E. Sunnyslope Lane, Phoenix, Ariz., has sent in a small sample of black sand which comes from the Big Bug District, Yavapai Co., Ariz. It is a medium grained black sand consisting chiefly of black magnetite, with minor amounts of brownish-green titanite (distinct xls), clear to smoky quartz, dark red garnet, etc.

Beach Sand from Crescent City, California

Wm. C. Chandler, 1465 Pacific Ave., Crescent City, Calif., has sent in two samples of beach sand from his area which is in Del Norte Co., in N.W. California. One sample comes from the beach at the foot of Pacific Avenue in Crescent City. It is a medium grained dark gray sand consisting chiefly of quartz (colorless and gemmy, smoky, milky, brownish, reddish to brownish chalcedony, red and brown jasper) and greenish epidote (much is gemmy) with some black magnetite.

The other sand comes from South Beach, 3.7 miles south from the first beach. It is a dark gray coarse sand consisting of the same minerals as the other but in addition it has some white and brownish sea shells. Both beaches are on the Pacific Ocean.

Beach Sand from Bradenton Beach, Florida

Bradenton Beach, Manatee Co., Fla. is on the Gulf of Mexico. From this beach we have a sand sample that was sent in by Noel Campbell, 89-18 139th St., Jamaica 35, N. Y. This is a coarse gray sand consisting chiefly of fine grained colorless quartz with small to coarse fragments of sea shells (chiefly white but gray, pink, and very dark gray also present). Under long wave light the shells fluoresce cream.

Geode Sand from Harrodsburg, Indiana

A most interesting sand sample has been received from Walter Reeves, Rf. 3, Greencastle, Ind. And from his letter dated June 28, 1953, we have the following item:

"A packet of material taken from a large geode from Harrodsburg (Monroe Co.), Ind. The interior of the geode was almost filled with the powder. So far no one has identified it. Only one of this kind that I ever found."

This is a coarse pinkish-tan sand consisting chiefly of pinkish-tan gypsum with tiny amount of rock crystal.

Beach Sand from Shoreham Beach, Maryland

Shoreham Beach is on the Chesapeake Bay in Anne Arundel Co., Md. The Editor's cousin, Myrtle Phillips, 2625 17th St., N.E., Washington 18, D. C., has sent in a sample of the sand. It is a fine grained sand consisting entirely of quartz (chiefly colorless but smoky and brownish also present).

Lake Sand from Fairmont, Minnesota

In Fairmont, Martin Co., Minn., is Lake Sisseton, a nice body of water. On July 2, 1952, the conductor of this column, with his cousin Royce Phillips of Washington, D. C., paid the lake a visit guided by A. F. C. Heiser of Fairmont. There was a spot where some sand could be collected and from here we have a small sample. This is a dark gray coarse sand consisting chiefly of quartz (clear, brownish, smoky, also gray chalcedony) with some brownish feldspar and black magnetite.

The lake was named for the Sisseton Indian tribe, so Mr. Heiser informed us.

River Sand from Grassy Point, New York

Grassy Point, Rockland Co., N. Y., is on the west bank of the Hudson River.

On Feb. 25, 1953, the conductor of this column made his first visit to the locality accompanied by his cousins, Emily Karolack and Margie Bourne, both of Peekskill and who knew the area. There is a beach at Grassy Point that is about 500 feet long and 75 feet wide—it did not look very attractive as the winter storms had littered it with drift wood, cans, broken bottles, boulders, etc. However there is a lot of sand and a large sample was collected.

This is a very coarse dark gray sand. It consists of a mixture of quartz (colorless, smoky, black basanite, brown, also red jasper) with white calcite, black magnetite (some of it is lodestone), pinkish microcline, whitish muscovite, black hornblende, and various rocks such as gray limestone, grayish to black phyllite, red (also gray) sandstone, and red shale. Also present and fairly common is red brick and anthracite coal. Brick making was once an important industry all along the Hudson River and so the brick grains and pebbles are from some old brick yard. The coal must have come from some coal barges which have plied the river for years.

Beach Sand from Near Yachats, Oregon

Yachats, Lincoln Co., Ore., is on the Pacific Ocean. About 9 miles south of Yachats, but in Lane County, is a beach from which we have a small sand sample that was sent in by Arthur W. Browne, 623 Palo Alto St., Mountain View, Calif.

This is a dark reddish-gray fine grained sand consisting of pinkish garnet, colorless to smoky quartz, green epodite, some black magnetite, and a little colorless zircon which fluoresces orange under the Mineralight.

Garnet Sand from Nome, Alaska

Frank H. Waskey, Dillingham, Alaska, has sent in a small sand sample from the beach at Nome, Alaska. This was collected in the early 1940's and because of its red color was called "ruby" sand.

It is a dark red medium grain sand consisting chiefly of reddish garnet with black lustrous magnetite, smoky quartz, greenish epidote and a little mica schist.

Beach Sand from the Canary Islands

The Canary Islands are in the Atlantic Ocean off the N.W. coast of Africa. The islands belong to Spain. From Las Palmas, on the N.E. coast of Grand Canary Island, we have a sand sample that was collected from the beach.

This is a fine grained brown sand consisting chiefly of brown shells (which give its color), but some white and pink shells are also present. The minerals occurring in the sand are sanidine (transparent, colorless, tabular glassy grains, much resembling broken glass), dull black magnetite, black lustrous hypersthene, dark green augite and green olivine.

The sand was donated by Sandy Ramsay, 1015 Aikenhead Rd., Kings Park, Glasgow S4, Scotland; it was collected by Sandy's sister while returning from a recent trip to South Africa.

Lake Sand from Gareloch, Scotland

Gareloch ("short lake") is one of the smaller lakes of western Scotland in Dumbarton County. At the head of the lake (north end) is Gareloch Head and from this locality we have a sand sample that was sent in by Sandy Ramsay, 1015 Aikenhead Rd., King Park, Glasgow S4, Scotland.

This is a very coarse sand. It consists chiefly of smoky quartz and gray mica schist. Some purple fluorite, and a few grains of black magnetite are also present.

Beach Sand from Vieques Island, P. R.

Vieques Island, 21 miles long and 6 wide, is east of Puerto Rico in the Caribbean Sea and belongs to Puerto Rico which in turn is an American possession. From the beach of Vieques Island we have a small sand sample that was sent in by David A. Burgess, Calle Atlantic 3, San Juan, Puerto Rico.

This is a coarse brown sand. It consists chiefly of brown quartz; colorless and smoky quartz, gray chalcedony, black magnetite, red coral and white sea shells are also present.

Beach Sand from Tau Island, Samoa Islands

Tau is a large island in the Pacific Ocean lying 18 miles east of Tutuila

(American Samoa). Both islands belong to the U. S. From Faga, on the north coast of Tau Island, we have a sample of beach sand that was sent in by Max Haleck, Pago Pago, Tutuila, American Samoa.

This is a coarse black sand consisting chiefly of black chromite, gemmy green olivine, (some reddish), white sea shells and a tiny amount of black magnetite.

Wadi Sand from Wadi Hof, Egypt

A wadi is a river or small stream. From Wadi Hof, which is about 10 miles south of Cairo, the largest city in Egypt, we have received a sample of sand from Dr. C. H. Barlow, Box 54, Trumansburg, N. Y., who had collected it a few years ago when he was residing in Egypt.

This is a yellow-brown medium grained sand consisting almost entirely of light brown quartz (ferruginous quartz) with a tiny amount of black magnetite.

Gold Bearing Sand from Calaveras Co., Calif.

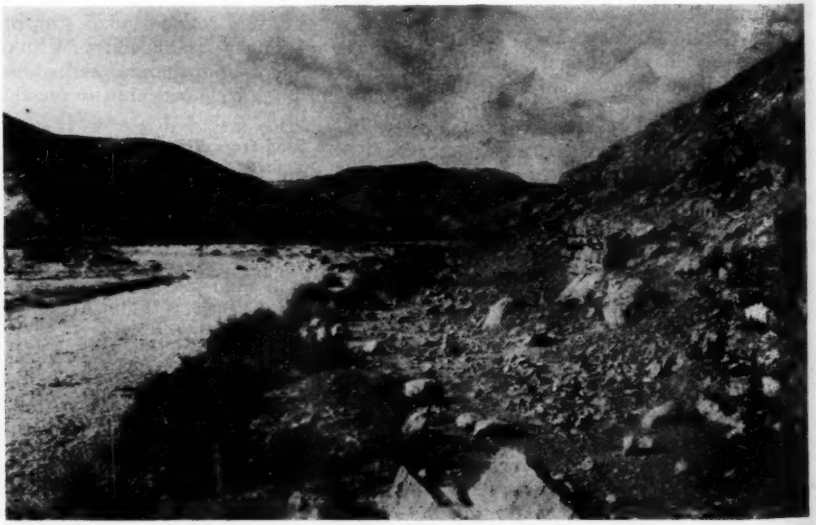
From the North Fork of Calaveras River in Calaveras Co., Calif., we have a sand sample that was sent in by Roy Plummer (Plummer's Minerals), 4720 Point Loma Ave., San Diego 7, Calif. "The enclosed sample of sand was picked up on our recent trip north," — paragraph in Mr. Plummer's letter dated July 26, 1953.

This is a black medium grained sand consisting chiefly of lustrous black magnetite with minor amounts of native gold, deep red gemmy garnet, green epidote, clear, also smoky quart, and pale brownish zircon that fluoresces orange under the Mineralight.

Creek Sand from Silver Creek, Idaho

Viola Shull, Challis, Idaho, sent in a sample of sand collected from Silver Creek, 44 miles N.W. of Challis. "Silver Creek is in Lemhi County and Challis is the nearest post office," from her letter dated July 12, 1953.

This is a gray coarse sand consisting of quartz (colorless, smoky — some of each showing crystal faces) and gray clay.



Wadi Hof, Egypt.

Shell Sand from Atlantic Beach, Florida

As its name implies, Atlantic Beach is on the Atlantic Ocean; it is in Duval County of northern Florida. From the beach we have a sand sample that was sent in by M. L. Peterson, 933 N. Longfellow St., Arlington, Va.

This is a coarse brown sand consisting almost entirely of brown sea shells; some colorless quartz is also present.

Creek Sand from Near Custer, S. D.

Helen M. Sloat, 1645 Washington Ave., Hot Springs, S. D., has sent in a sand sample which she collected from French Creek in Custer Co., S. D., about 10 miles southeast of Custer on the Hazelroot Road.

This is a dark gray coarse sand consisting chiefly of whitish muscovite and brown to colorless quartz.

Creek Sand from Lost Creek, Texas

Mrs. Ruby Renfro, 2901 Bomar Ave., Fort Worth 3, Texas, has sent in a number of sands one of which bore the following label:

"Sand from Trinity formation, Erath County, Texas. Bed of Lost creek, N.W. of Sapoak, Texas."

This is a pale brownish coarse sand. It consists of quartz (colorless, smoky, gray chalcedony, and red, also brown jasper), red garnet, brown limonite, and lots of white to gray limestone.

River Sand from Orondo, Washington

Orondo, in Douglas Co., Wash., is on the east bank of the Columbia River. From the river in this town, we have a sand sample that was collected for us by Arthur W. Browne, 623 Palo Alto St., Mountain View, Calif.

This is a dark gray medium grained sand. It consists chiefly of quartz (smoky, white, brownish) with minute amounts of black magnetite and silvery muscovite.

Beach and Garnet Sands Near Hoh River, Washington

We have received two sands from Jefferson County, Wash., (on the famous Olympic Peninsula) and both collected near each other. The beach sand was sent in by Arthur W. Browne, 623 Palo Alto Ave., Mountain View, Calif. It was collected near the mouth of the Hoh River where it empties into the Pacific Ocean. This is a dark gray fine grained sand consisting chiefly of colorless quartz, white feldspar, pink garnet, black magnetite, and colorless zircon that fluoresces orange under the Mineralight.

The garnet sand was sent in by C. H. Robinson, Sr., 623½ 16th St., S.W., Puyallup, Wash. From his letter, dated Dec. 22, 1952, Mr. Robinson writes:

"Sand comes from the Pacific beach near where it empties into the Pacific Ocean via the Hoh River on the Indian Reservation. Under my microscope it looks to be mostly garnet sands. They call the place "Ruby Beach"—very picturesque indeed on the famous Olympc Mt. Loop trip."

This is a medium grained red sand consisting chiefly of red to pinkish garnet with some quartz (colorless, smoky, white), green epidote and black magnetite. A considerable amount of coarse chocolate-brown grains in the sand had us puzzled for a while but—they turned out to be coffee grains (apparently the container used for the sand has some coffee grains in it).

Fossil Sand from Antwerp, Belgium

In September, 1952, we received an interesting fossil sand sample from Ward's Natural Science Est., Inc., Box 24, Beechwood Sta., Rochester, N. Y. Mr. William McClennan of Ward's informed us that the sand came from a dock excavation in Antwerp—the dock had been enlarged and that at a depth of 80 feet the fossil sand was found.

Raymond R. Hibbard, 219 Bissell Ave., Buffalo 11, N. Y., is a noted authority on fossils and in a letter to him we mentioned the above sand. Here is his reply, dated Nov. 30, 1952:

"I have learned from an article on Belgium in "The Micropaleontologist," that back in 1950 a new petroleum dock was dug near Antwerp. In excavating there was exposed about 14 meters (about 46 feet) of sediments of the Diestian and Scaldisian formation and much microfossil material was secured. Since the author of the article says the Scaldisian does not occur so beautiful elsewhere in Belgium, it would seem more likely that the sand from Antwerp you received from Ward's came from the new petroleum dock near Antwerp."

This is a dark gray coarse sand made up chiefly of colorless and smoky quartz with grayish Pliocene Scaldisian fossil molluscs (pelecypods and gastropods).

Antwerp, chief port of Belgium, situated on the broad and deep Schelde River, 55 miles from the open sea, is one of the greatest seaports of Europe.

Mineral Hobbyist Ceases Publication

It is with sincere regret we have to announce that the MINERAL HOBBYIST, that fine Texas magazine, has ceased publication. We quote from a letter dated July 14, 1953, from Hugh Leiper, Editor:

"You will perhaps recall our conversation at Houston (Texas) with regard to some of the problems of publishing a magazine. My own have come to a head, and due to the great pressure of my own business, due to the great drought which has adversely affected business in the Southwest, I am forced to resign as Editor of THE MINERAL HOBBYIST. The June issue, Vol. 2, No. 1, will be the last issue.

"We tried to find another editor who would take on the job, but since no one could be located who was willing or able to give the time it takes, Mr. W. V. Vietti, President of the Texas Regional Federation of Mineral Societies, Inc., publisher of the magazine, has requested me to return all copy for the August issue; to return all new and renewal subscriptions, and to rebate all old subscribers outside of the area of the Texas Regional Federation for the unused portion of their subscriptions. The members of the Texas Regional Federation, whose dues cover their membership, annual Show, as well as a publication, are not affected, as some form of a mimeographed paper without advertising will be continued for them.

"I wish to make it clear that the magazine is solvent, all bills are paid, and all subscribers taken care of. We felt that the present was the best time to effect the discontinuance of the magazine while the above conditions held true.

"The editing of such a magazine is a full-time job, and I leave the field regretfully, having given a great many hundred hours of my time without pay of any sort, but with the feeling that some good has been accomplished in this area. I want to thank you for your sincere good wishes and cooperation at all times."

Two Errors In R & M! OH! OH! OH!

Editor R & M:

I received the July-August number of R & M and read with much interest your story of trip to Colorado.

I found two errors in same.

No. 1. You missed by 7 miles The Thompson Museum which has a very large collection of rocks, fossils and minerals. I would like very much for you to see and write a story for your fine magazine that others may know about and enjoy. You can spend two hours to a half a day easy here.

I am fond of fossils and do have them. Glad to know that you have a fossil department.

No. 2. You stated in your story that Harrisonburg was the county seat of Buckingham Co. It is Rockingham because it has rocks and hams, etc.

My son, B. Harrison Thompson Jr., at Luray, Va., has a real good collection in his shoe shop on Main St. Stop to see him on way down.

Write me when I can see you. If you come by bus, dial Edom 2563 when you get to Harrisonburg and I will pick you up.

B. H. Thompson
Rt. 4, Harrisonburg, Va.

Aug. 3, 1953

You Can Judge The Cover!

Editor R & M:

I'd like to cast my ballot in favor of that controversial matter, the "colorful cover." After all, a cover is only a means of protection and identification, and whether it is modern or antique in composition is utterly unrelated to the quality of the publication. You can't judge a book by its cover, but you can judge the cover. It should conform to the demands of a modern age—which R & M's now does.

R. C. Maserang
Box 395, R.R. 1
East Carondelet, Ill.

Aug. 3, 1953

Club and Society Notes

Attention Secretaries—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

East

Boston Mineral Club Mystery Trip Prizes!

Editor R & M:

Enclosed please find check in the amount of $9.00 covering subscriptions to R & M given by the Boston Mineral Club as prizes in their annual Mystery Trip. Subscriptions to R & M proved such acceptable prizes in 1952 that the committee voted unaminously to repeat the same prizes for 1953. Consequently I take great pleasure in submitting the names of the 1953 winners: Mr. Tom Howie, Ridge St., Millis, Mass.; Mr. Glenn E. Daniels, 16-2 Garden Lane, Waltham, Mass.; Mr. William C. Launder, 54 Watson Rd., Belmont 78, Mass.

Walter G. Chick
Treas. Boston Mineral Club
392 West Roxbury Parkway
Roslindale 31, Mass.

Aug. 18, 1953

Lapidary and Gem Society of New York

The Lapidary and Gem Society of New York have now made their headquarters at the Hotel Paris, West End Ave. at 97th St., New York 25, N. Y. First meeting was held on June 25, 1953.

The Manager of Hotel Paris, Mr. Martin Walter, is not only an active mineral collector but a member of a number of clubs (including R & M A), so subscribers should make Hotel Paris their headquarters when visiting New York City.

New Haven Mineral Club

Saturday, June 20, 1953, the New Haven (Conn.) Mineral Club met in New Haven and we drove up to Chester, Vermont. Here we all put up at Vails Motel, which is less than a mile from the dumps of the talc mine we were to visit.

We washed up a bit, (golly was it hot), donned our work clothes and up to the mine. It's no longer being worked but there's plenty to be found by scratching around the dumps. We unearthed a boulder that looked real promising and went to work on it in the broiling sun, swinging a 12 pound sledge and driving in more chisels till it cracked clean and we lifted one side away, an hour later.

What beautiful hornblende crystals and pyrites, in hornblende schist, big slabs—18 inches across and about 1½ inches thick. I slid one into a container so it wouldn't get marred and that particular one is being taken down to Mr. L. R. Duersmith, Curator of Minerology at Franklin and Marshall College at Lancaster. Pena., for their collection.

After loading up here we went over to Gassets, Vermont, where we'd been told we'd find pyrites 1¼ inch square but tho we'd have been real contended like with smaller ones we found not a trace of them. This mine is no longer being worked and the mine proper is filled with water. Small samples only.

Sunday we trekked off to Westmoreland, New Hampshire, and up through the pasture and into the woods with a little protection from the blistering sun where we found splendid specimens of quartz crystals, some of them so minute they'd make wonderful micro-mounts. This used to be a fluorite mine but is not at present working tho the owners of the property say they believe it will be again shortly.

Charles Wight
46 Queens Ave.,
Stratford, Conn.

Mid-West

Gulf Coast Gem and Mineral Society

The Gulf Coast Gem and Mineral Society was organized in February, with A. L. Mooney, organizer, presiding. Rex L. Hardway was elected president. Other officers elected were A. L. Mooney, vice-president, Mrs. Harold Gingerich, secretary, and G. J. Malherbe, treasurer. Board of Directors include M. H. Ivey, Robert Gault and Joe Gier. The society is affiliated with the Texas Regional Federation of Mineral Societies, Inc., and the Rocky Mountain Federation of Mineral Societies. Purpose of the society is to exchange ideas and information concerning gems, minerals and the art of lapidary.

Most of the membership seems to be interested chiefly in lapidary. Society meetings are the fourth week of the month, usually Wednesday or Thursday nights, 7:30 p.m.

J. D. Haffner
1106 Cenizo St.,
Corpus Christi, Texas

Austin Gem and Mineral Society

The July meeting of the Austin Gem and Mineral Society was held in Bandit Cavern at which time the members were guests of the owners, Dr. and Mrs. A. A. Amend.

Mrs. Emil H. Spillmann was appointed Chairman of the Exhibit Commitee for the annual gem and mineral show to be held in November, and L. J. Struhall will assist her.

The August meeting was held at the Polo Grounds in Zilker Park and followed by a watermelon party.

W. N. Alexander donated the door prize which was awarded to James C. Arnold.

After the business meeting the history of Bandit Cavern was given by Dr. Amend. Emil H. Spillmann reported on the Convention and Rock Show of the Mid-West Federation of Mineral Societies which he attended in St. Louis recently, and Henry Lindhe gave a report on his recent trip to Central America.

Sixty-two members and 14 visitors were present.

Mrs. Emil H. Spillmann
Austin, Texas

West

Pacific Mineral Society

Byrd's South Pole Expedition, which had for its major purpose mineral exploration and mapping, was again our topic under the leadership of Mr. L. C. Musselman, a participant. Mr. Musselman is from the School of Engineering of the University of Wisconsin.

The speaker reported that copper, iron, radium, asbestos, oil shales and limestones were located, as well as coal and fossil fern proving the former warm climate. Much of the data obtained is still top secret.

The party was free from illness, despite the seemingly impossible living conditions, as germs were absent. The doctor found himself unemployed. With planes and dog teams an immense area was "prospected."

The Pacific Society visited the Eagle Mountain Ore Mine on June 27. This is a Kaiser Corporation Property and the source of present operations.

Our July display was by Mrs. Ingledue, and reflected North Pole collecting, a long distance from the Speaker's South Pole explorations. She spent several years in Northern Alaska, and the gold displayed she panned herself. She also collected copper and lead ores from mines visited.

Our President, Mr. Guy W. Morris, Junior, greeted a large audience which spent an informative and pleasant evening.

B. Royer
1234 W. 41st St.,
Los Angeles 37, Calif.

Los Angeles Lapidary Society

At the regular June dinner meeting of the Los Angeles Lapidary Society the following officers were installed for the coming year: Mr. Clarence Chittenden, President; Mr. Howard Evans, 1st Vice-President Mr. Charles Cook, 2nd Vice-President; Mr. Charles Parsons, Treasurer Mrs. Claire Schroeder, Recording Secretary, Mrs. Nell Stein, Corresponding Secretary.

We also had the pleasure of enjoying a very fine lecture by Dr. Rudolph Von Huene of California Institute of Technology, whose subject was "Thin Section." The lecture and slides shown by him were most interesting.

July Meeting

The Los Angeles Lapidary Society at their July meeting enjoyed a talk by Mr. Victor M. Arciniega on Meteorites. His explanation on how to discover them out in the field, their testing and their composition, was of interest to all.

Nell Stein
Corresponding Secretary
4409 5th Avenue
Los Angeles 43, Calif.

East Bay Mineral Society, Inc.

"The East Bay Mineral Society installed their new officers for the coming year at a very nice banquet on June 4. Pictures presented by the Sierra Club on the John Muir Trail were enjoyed by all. Officers installed were President Ernest M. Stone, Vice-President Dr. F. M. Yockey, Secretary Mrs. Dennis C. Patterson, Treasurer Mr. W. R. Watson and a new Director Mr. Sidney Smyth. The officers have been working hard planning meetings and activities for the coming year. Regular meetings start again Sept. 3 and a cordial invitation is extended to all visitors and prospective members.

Betty Patterson
Secretary
P. O. Box 1196
Oakland 4, Calif.

Sacramento Mineral Society

At the June 26, meeting of the Sacramento Mineral Society, Mr. Frank Wilcox of Oakland gave a diversified talk on jade, rhodonite and opal. Samples of opal were furnished, with sanding cloth and polishing strips for those who wished to work on the material at the meeting.

R. J. Silveira and E. H. Niehaus were elected delegates to the Convention at San Diego, Calif., July 17-19. Together with John Bairelein, a director of the Federation, they represented the Sacramento Mineral Society.

Paul H. Steele
Chairman Publicity Committee
Box 935,
Sacramento, California

Colton's Slover Gem and Mineral Club

Colton's Slover Gem and Mineral Club, which was organized just a year ago, now has 34 members. We have one meeting and one field trip a month. Members' interests are varied, including rock collecting, lapidary work, Indian artifact collecting, etc. They have participated in three hobby shows this last year, with just a display in one, and a complete lapidary shop set up in the other two, manned by club members. Several new members were recruited from interested spectators. Members have had specimens on display at the Colton Library several times during the year.

Mrs. Aileen McKinney
1080 Rancho Ave.
Colton, Calif.

Japan

Mineralogical Society of Japan

At a meeting held at Tokyo University on June 30, 1952, it was decided to establish The Mineralogical Society of Japan

The following officers were elected:

President: Zyunpei Harada, Hokkaido University, Sapporo.

Secretaries: Toshio Sudo, Keiichi Omori.

Treasurer: Bumpei Yoshiki.

Editor: Nobuo Katayama (Chief); Zyunpei Harada, Jitsutaro Takubo, Toyofumi Yoshimura.

In addition a Council consisting of 16 members was selected. Two journals are contemplated, one "Kobutsugaku Zasshi (Mineralogical Journal) in Japanese, and "Bulletin of the Mineralogical Society of Japan" in foreign languages.

Nos. 1 and 2 of the Kobutsugaku Zasshi were published in September, 1952, and January, 1953. Number 1 of the Bulletin is in preparation.

Shriner Takes Time Out From Convention Festivities!

Editor R & M:

I want to take this opportunity to congratulate you on your most splendid magazine and to thank you for the hospitality shown me by yourself.

Recently while attending the Shrine Convention in New York City I took temporary leave of the "fun-making" with my brother Shriners and personally visited you in order to meet you and renew my subscription to your magazine ROCKS AND MINERALS for the next year.

It is indeed a valuable aid to me in my new found hobby; the collection of rocks and minerals.

Oscar H. Lehmann
270 Schuele Ave.
Buffalo 15, N. Y.

Aug. 1, 1953

Some Notes on the Midwest Convention

The Geode Rocks and Minerals Society of Southeastern Iowa was well represented at the St. Louis Convention of the Midwest Federation of Mineralogical and Geological Societies under date of June 26-27-28, 1953. The President of the Geode Rocks and Minerals Society—E. N. Smith; Vice President—Raymond Colton and wife Dorothy; Secretary and Treasurer—Edward Earl Smith, his wife Lois and baby girl Barbara Dianne Smith a true pebble pup who is cutting her teeth on small Geodes; Director William Mathers and wife, Joan, of Gamaliel, Arkansas, were present.

The Geode industries using two cars transported close to 2700 pounds of Geodes to display in the fine booth reserved for the show.

We were allotted the only booth with an air conditioning fan on the entire floor and considered ourselves very fortunate as the temperature was up in the 90s during the show.

We displayed 7 matched geodes on pedestals ranging in size from 9 inches to 16 inches in diameter with cluster type crystals of iron pyrites on the inside and outside. The average weight of these geodes was 70 pounds.

Two hundred geodes of the 2 to 8 inch type containing minerals of pyrites, pink dolomite, lemon dolomite and deep brown dolomite, millerite, calcite crystals both clear and opaque, barite, sphalerite, kaolin, bitumen, chalcedony, hematite, ankerite, chert, limonite, gypsum, 100 sets of Geode Bookends and 100 Geode Ash trays. Both Bookends and Geode Ash trays contained many types of minerals any one of which was worthy of a place on a collector's display case.

Our companion booths were occupied by the Eckert Mineral Research of 110 East Main St., Florence, Colorado. The Eckerts are truly mineral specialists with their family following in their footsteps and with the newly adopted son, Edward, learning very fast. They will have a storehouse of mineral knowledge to pass on to the collectors of America. (Their booth was marvelous).

The California House of Rocks across the doorway, who hail from 6108 N. Lorelei Ave., Bellflower, California, brought many fine minerals for display. Both the Eckerts and the California House of Rocks had many friends who called and visited with them.

The new drill of the Nye-Cox Co., called the Nyco, and which retails at $29.50 plus tax, is a honey and of course we bought one for the Geode Industries Shop. It does the work and is so compact. It is manufactured at 61 Helmsdale Drive, Akron 12, Ohio.

In browsing around the convention we became acquainted with Dr. J. D. Willems of Chicago whose knowledge of old books and his fine lapidary work and knowledge of such makes us glad to know him. He is truly a specialist.

A truly pleasant man was Mr. B. M. Brehm of Warren, Ohio, of 990 Dana, N. E. with his lapidary display, rough and cut material, and diamond drilling machine. We wished for more time to visit with him. The Brentwood Lapidary & Gem Shop of Brentwood, Missouri, took extra time to show us their display. They are very courteous people and we shall visit them in Brentwood later on.

The Midwest Mineral Co. of Kansas City, Mo., featured a fine display of Septaria rocks which fluoresce and we quickly bought two for our display case, and glad to get them at that price. The owners accorded us a fine reception and took time to inform us of their display. There are still a lot of fine people in the U. S. A. We saw barite crystals in calcite, a nice display of galena, satin spar, and selenite crystals and much more in their display.

We visited and became acquainted with Mr. and Mrs. E. R. Heike and their mineral display. We have read their ads for years in the various mineral magazines. Both the Heikes fulfilled our expectations, full of vigor and very appreciative of new acquaintances. They took much time to discuss minerals and geodes with us, and we learned much from them. We have also read Mr. Heike's articles on minerals. One of his articles (Collecting in Illinois) printed in THE MINERALOGIST as of February 1953 shows he makes a study of the various rocks and minerals. Lots of luck, and write more.

The Crinoid Display of B. H. Bean of Legrand, Iowa, was a feature of the show and right beside him we met our good friend, H. R. Straight of Adel, Iowa, with a wonderful display of petrified wood from many states and polished very beautifully. How do they do it?

There were the Mr. and Mrs. Banks from Rolla, Missouri; the Petersons of Minneapolis, Minn.; the Odoms from Austin, Texas; the Pascoes of 1414 W. Glenoaks Blvd., Glendale, Calif., who took time to discuss minerals and show us their display. What energy it must take for the Eckerts, the California House of Rocks, Mr. and Mrs. Berkholz, and the Pascoes to transport so much material and how lucky we are in the middle west to be able to see their display. Please come back to the Chicago Convention in 1954, we will be glad to see you. We enjoyed our visit with Ben Hur Wilson, and Mr. Fleener, co-authors of Quartz Family Minerals, and for the first time we met Mrs. Oriel Grand-Girard, our Secretary of the Midwest Federation of Mineralogical Societies who proved to be a charming woman and who had time to tell us about the society and the officers. We think Walter H. Vesper, chairman of the Commercial Exhibits, did a swell job. We were treated royaly and met many fine rock hounds. We think the Chase Hotel in St. Louis is among the finest in America and we shall look forward to the next convention.

The Smiths, Ed and Earl,
New London, Iowa.

Two Of A Kind!

Editor R & M:

Here's my check for another year of ROCKS AND MINERALS. Yours is the best publication there is to go with the best hobby there is. Thanks.

Robert S. Buel
3920 Austin Ave.
Waco, Texas

July 4, 1953

Publications Recently Received

GRIM—Clay Mineralogy

By Ralph E. Grim, Research Professor of Geology, University of Illinois, 1953, 334 pages 117 figures, 6¼x9¼, cloth . . $9.00
Published by McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y.

Here is a new text by a distinguished authority which covers the composition and atomic structure of the clay minerals, their physical characteristics, and their origin and occurrence.

Clays, shales, and soils are of vital importance in many fields; geology engineering where many structures are built on or with clay materials; ceramics where clay is the raw material; agriculture where clay materials form and determine the properties of soil; the petroleum industry where clays are used in drilling and in making catalysts; and the paper industry where clays are used as fillers.

This exceptional book gathers all this information together for the first time and organizes it with great excellence into a totally unified story, incorporating carefully prepared material, a clear presentation, and good illustration with line drawings and tables of data.

CONTENTS—Introduction. Concepts of the composition of clay materials. Classification and nomenclature of the clay minerals. Structure of the clay minerals. X-ray diffraction data. Shape and size—electron micrographs—Ion exchange. Clay-water system, Dehydration, rehydration, and changes taking place on heating. Clay—mineral—organic reactions. Optical properties. Miscellaneous properties. Origin and occurrence of the clay minerals. Appendix. Index.

HINDS—Evoluation of the California Landscape.

By Norman E. A. Hinds, Associate Professor, Department of Geological Sciences, University of California, Berkeley, Calif. December, 1952, 240 pages, 156 figures, 3 maps (in pocket), 10x8½, cloth $2.50
Published by the Division of Mines, Ferry Building, San Francisco 11, Calif.

We think Dr. Hinds has been quite successful (for a geology professor) in describing and interpreting the diverse landscape of California without using abstruse geological terminology. This and the many fine photographs and drawings should give the book wide popularity among those interested in the earth sciences who have traveled or now live in California. At the price of $2.50 plus sales tax (in California), it is a bargain.

CONTENTS—Introduction. Sierra Nevada. Basin-Ranges. Mojave Desert. Colorado Desert. Modoc Plateau. Cascade Range. Klamath Mountains. Great Valley. Coast Ranges. Transverse Ranges. Peninsular Ranges. Sea Floor. Index.

MONTGOMERY—Pre-Cambrian Geology of the Picuris Range, North-Central New Mexico.

By Arthur Montgomery, Geology Professor, Lafayette University, Easton, Penn., 1953, 89 pages, 9 plates, 2 figures . . $1.50
Published as Bulletin 30 by the New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.

The latest geologic study published by the New Mexico Bureau of Mines and Mineral Resources is Dr. Arthur Montgomery's "Precambrian Geology of the Picuris Range, north-central New Mexico." The report, State Bureau of Mines Bulletin 30, is a detailed technical discussion of the metamorphic and igneous rocks near the famous Harding pegmatite mine in Taos County.

The Harding mine is the chief New Mexico source of tantalum, lithium, and beryllium minerals, and is one of the most productive beryl mines in the United States. In fiscal 1952 the mine shipped $40,000 worth of beryl and 1055 tons of spodumene. The locality is well-known to gem and rock hounds for the abundance of unusual mineral crystals. Especially prized are the coarse-shaped crystals of staurolite.

Dr. Montgomery, in the bulletin, portrays the rocks of the Picuris Range and traces their geologic history throughout the more than half a billion years of their existence. In addition to the thorough illustration of the minerals of the Harding pegmatite, Dr. Montgomery describes ore-bearing quartz veins which contain copper, tungsten, lead, silver, bismuth, and gold. The rock and mineral descriptions should greatly aid exploration for economic mineral deposits in the Precambrian rocks of New Mexico.

The author owns the Harding mine and was in charge of operations during World War II when critical strategic minerals were mined. Dr. Montgomery has written several other technical papers on the remarkable minerals of the Harding pegmatite.

The present monograph summarizes laboratory studies made at Harvard University as a requirement for the Doctor of Philosophy degree in geology. Dr. Montgomery is now a geology professor at Lafayette University.

JAHNS—Pegmatite Deposits of the White Picacho District, Arizona.
By Richard H. Jahns, California Institute of Technology, Pasadena, Calif. November 1952, 105 pp. 24 plates, 5 figures. $1.25
Published by University of Arizona, Tucson, Ariz., as Bulletin No. 162.

Deposits of pegmatite minerals are known from many parts of Arizona but the largest and longest-lived operation is the mine of the Consolidated Feldspar Corp., a few miles northeast of Kingman. Over 75 minerals have been found in the Picacho District pegmatites which include native copper, descloizite, native silver, vanadinite, wulfenite, etc.

JANUZZI—Connecticut Minerals on Parade.
By Ronald Everett Januzzi. Illustrations by Virginia Howie. 89 pages, 8½x11, paper cover $3.00
Published by the Mineralogical Press, 83 Elm St., Danbury, Conn.

Here is the best book on minerals for youngsters that we have yet seen. It is written in simple language with most appropriate illustrations and in easy-to-read print. It should be most favorably received and we hope it will have a wide sale.

In the preparation of this book the author has attempted to present the story of the minerals and rocks in such a manner that teacher and child alike could find enjoyment in each page. A collection of 42 minerals and rocks, as described in the text, will accompany the book. It is the author's belief that the children will learn a great deal more if they see an authentic mineral or rock specimen as they read the text with their teacher. In order that this book accomplish its purpose in full the teacher should arrange several trips to local museums and to mines and quarries. The minerals in this book are those that the child will be able to find if the mineral localities in this book are visited. The author has striven to eliminate all technical data that children in the early grades could not easily comprehend. One of the purposes of this book is to point out to the teacher as well as the child the increasing importance of mineralogy in the present and in the future. In order to vitalize the subject for the child the minerals and rocks relate their own personal story.

The author, a resident of Connecticut, has listed localities in his state where minerals in this book may be found. These minerals may also be found in many other areas of the United States.

Accompanying the book as mentioned above is a collection comprising 29 minerals, 10 rocks, and 3 examples of a rock, mineral, and crystal; also a streak plate. This collection sells for $3.00 but if ordered with the book the two may be had for $5.00.

Smithsonian Publications

The Smithsonian Institution, Washington 25, D. C., has issued:

Pub. 4109—*The Tillodontia: an early Tertiary Order of Mammals,* by C. Lewis Gazin, 110 pp., 16 plates, (June 1953).

Pub. 4110—*Geological Background of the Iyatayet Archeological Site,* Cape Denbigh, Alaska, by D. M. Hopkins and J. L. Giddings, Jr., 32 pages, 4 plates (June 1953).

Pub. 4129—*The Pleistocene Fauna of Wailes Bluff and Langleys Bluff, Maryland,* by S. F. Blake, 32 pages, 1 plate (August 1953).

Pennsylvania Publication

The Lancaster County Historical Society, 307 N. Duke St., Lancaster, Pa., has printed the following paper:

A History of the Magnetite Mines of Conestoga and Martic Townships, by John W. Price, Sr., pp. 25-48, 6 plates, 1 map. Price 50c.

Lancaster County, Penn., is famous for its mines and minerals so the paper by Dr. Price is of much interest and value.

Western Australia Publications

The Geological Survey, Perth, Western Australia, has recently issued two atlases to accompany Bulletin 103.

Supplementary Atlas No. 1 — Geological Maps of Portion of the Mt. Margaret Goldfield, 9 folded maps.

Supplementary Atlas No. 2 — Geological Maps of Mining Groups and Plans and Sections of Workings, 22 folded maps.

Both Atlases have been prepared by R. A. Hobson, B. Sc. (Hons): K. R. Miles, D. Sc. F. G. S. and R. S. Matheson, B. Sc. Each is 7¾x13 inches in size.

Arizona Publication

University of Arizona, Tucson, Ariz. has issued the following publication:

Bibliography of the Geology and Mineral Resources of Arizona, 1939-1952, by John W. Anthony, Eldred D. Wilson, and Richard T. Moore.

Issued as Bulletin 161, 62 pages .....45c (Free to residents of Arizona).

Florida Publication

The Florida Engineering & Industrial Experiment Station, University of Florida, Gainsville, Fla., has issued the following publication:

The Development of Mineral Wool from Florida Minerals, by A. F. Greaves-Walker and A. Philip Welch. February 1953, 28 pages.

CATALOGS

Filer's 1953 Catalog

J. C. Filer & Son, 1344 Highway 99, San Bernardino, Calif., have recently issued their 1953 catalog on choice mineral specimens, cutting material, lapidary equipment and supplies, jewelers tools, sterling silver, and findings. The catalog is 8½x11 in size, contains 40 pages, illustrated and issued free.

Swift's Catalog

James Swift & Son, Ltd., 113-115a Camberwell Road, London, SE5, England, have a 16-page illustrated catalog on petrological microscopes. It is issued free.

Sold Immediately on R & M!

Editor R & M:

A few days ago a rockhound friend of mine, Jimmy Helb, gave me a copy of R & M. I was sold immediately on this fine magazine.

I am enclosing $4.20 for a one year subscription plus two back numbers.

John S. Wolf
Baltimore, Md.

R & M Is Priceless!

Editor R & M:

I wouldn't miss R & M for anything. It is priceless for the collector and I have encouraged many young collectors to subscribe.

M. L. Leonardi
July 8, 1953 Trona, Calif.

We Can Count on His Renewal!

Editor R & M:

Of course! of course! You can continue to count on my yearly renewal. Sometimes I'll be a little late, but don't stop sending my issue!

John P. Cuches
Aug. 8, 1953 Middle Village, N. Y.

Young Girl Subscribes for R & M

Editor R & M:

Enclosed find $3.00 for which please send a subscription for one year to the magazine ROCKS AND MINERALS.

I have become very much interested in collecting rocks and minerals. I have a friend, Mr. Austin Harris, who gave me a copy of the magazine. I know that it will be very valuable to me. I am ten years old and hope to learn many interesting things and to make new friends through this hobby.

I shall be so glad to get my first copy of the magazine.

Ruth Skinner
2871 Hastings Rd.,
Cuyahoga Falls, Ohio

Aug. 5, 1953

Correction From Virginia!

Editor R & M:

Referring to your *Trip to Colorado*, July-August, R & M.

Harrisonburg is the county seat of *Rockingham* County. Buckingham County is east from Lexington, where you turned west. The Washington and Lee campus is south of, and immediately joins, the Virginia Military Institute campus. The buildings are at the top of and over the hill. They do not come down to the road like some of the V. M. I. buildings.

R. D. Cool
Madison College
Harrisonbur, Va.

Aug. 1, 1953

(Editor's Note)—In the above mentioned article, Harrisonburg was listed as the county seat of Buckingham County, the correct county is Rockingham. How the error occurred is a mystery. We are very sorry it had to appear in R & M.

CRYSTALS

They are up there, on the mountain,
Half-exposed, upon the mountain;
I have seen them, I have touched them,
I have tried to set them free. —
They are interstiсed and mingled;
Some are twinned and some are single,
But the matrix is of granite
So I'll have to let them be.

If I blasted on the mountain—
I don't own the gosh-darn mountain—
All the natives would come shouting,
And, in court I soon would be.
I have pounded, chiseled, burrowed,
Till my brow was wet and furrowed,
But I have not freed one crystal, —
So, I'll have to let them be.

In my sleep I climb that mountain,
Carry tools up to that mountain,
There I pry and drill and hammer
Every night, from ten to three.
I awake at dawn, be-draggled
And I go to work, quite haggard—
Those darn crystals on the mountain
Soon will get the best of me.

Francis E. Schiller
Rumford, Maine